

KAMARIN

Mounting base for telephone apparatus. Slaboproudy obzor 24
no.5:315 My '63.

KAMARISHKI, I.

"Ten Damages Occurring Most Frequently In Radio Sets."

p. 40 (Radio I Televiziia, Vol. 7, No. 6, 1958, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 11,
Nov. 1958

L 18194-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-l/Pr-l RM/WW
 ACCESSION NR: AP3005898 S/0153/63/006/003/0465/0470

AUTHORS: Pavlenko, T. G.; Andrianov, K. A.; L'vov, S. V.; Khananshvili, L. M.;
 Serafimov, L. A.; Kamaritskiy, B. A.

TITLE: Hydrolysis of organochlorsilanes in continuous-motion counterflow spray columns

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 6, no. 3, 1963, 465-470

TOPIC TAGS: methylchlorsilane, dimethylchlorsilane, phenyltrichlorsilane,
 plastios, counterflow spray column, continuous-motion spray column,
 hydrolysis

ABSTRACT: The process and apparatus described were used for the hydrolysis of methyltrichlorsilane and dimethylchlorsilane, and the co-hydrolysis of methyltrichlorsilane and phenyltrichlorsilane. The polymer obtained from methyltrichlorsilane was not inferior to that obtained with the periodic method in mixed-type apparatus: gel time, 12 min; setting time, 20 min; viscosity in toluene solution, 10.5 sec; dry residue, 24.5%. A plastic prepared from this polymer had good physico-mechanical properties, in excess of technical requirements except for bending strength. Orig. art. has: 2 figures, 5 tables.

Card 1/2 ASSN: Moscow Institute Of Fine Chemical Technology.

KAMARLI, A. P.

KAMARLI, A. P. —"Influence of Ox Warble Fly Invasion on the Organisms of Large Horned Cattle and the Search for Effective Periods of Treatment against the Ox Warble Fly." *(Dissertations For Degrees In Science And Engineering Defended At USSR, Higher Educational Institutions). (34). All-Union Inst of Experimental Veterinary Science of the Min Agriculture USSR, Moscow, 1955

SO: Knizhnaya Letopis' No. 34, 20 August 1955

* For the Degree of Candidate in Veterinary Sciences

KAMARLI A.P.

USSR/Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi R-1

Abs Jour : Ref Zhur - Biol., No 7, 1958, No 31081

Author : Troitskiy I.A., ^{prof.} Kamarli A.P. ^{aspirant}
Inst : All-Union Scientific Research Institute of Veterinary
Hygiene and Ectoparasitology
Title : Morphological Changes of the Blood in Foot Rot of Sheep

Orig Pub : Tr. Vses. n.-i. in-ta, vet. sanitarii i ektoparazitol.,
1957, 11, 271-275

Abstract : Studies were conducted under laboratory conditions at an experimental farm on clinically healthy and on diseased sheep. In the white blood of the sick sheep, the following insignificant changes were observed: a certain amount of leukocytosis, an increase of monocytes, and the appearance of young forms in the blood. No changes in the red blood or in the erythrocyte sedimentation reaction were observed.--
I.Ya. Panchenko.

Card : 1/1

KAMARLY, A. P. and FILATOV, I. P.

"Hypodermic gadfly in goats."

Veterinariya Vol. 37, No. 3, 1960, p. 65

Kamarly, A.P. — *Czech-Vet.Sci - Kirgiz Sci. Res. Animal and Vet. Inst.*

KAMARLI, A. P. (Candidate of Veterinary Sciences, Kirgiz Scientific Research Institute of Animal Husbandry and Veterinary Medicine)

"Utilization of chbrophos in subcutaneous gadfly invasion of cattle"

Veterinariya, vol. 39, no. 7, July 1962 pp. 80

KAMARLI, A.P., kand.veter. nauk; FILATOV, I.P.

Warble flies of goats. Veterinariia 37 no.3:65 Mr '60.

(MIRA 16:6)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva i veterinarii (for Kamarli). 2. Direktor Uch-Korgonskoy veterinarno-bakteriologicheskoy laboratorii (for Filatov).

(Warble flies)

KAMARI, I. A.P., kand. veterin. nauk

Use of chlorophos against warble fly infestation of cattle. Veterinariia
39 no.7:80 J1 '62. (MIRA 18:1)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva i
veterinari.ii.

RAMIRLI, A.P., kand. veterin. nauk

Measures for controlling the sheep botfly. Veterinariia 41 no.2:
46-47 F '65. (MIRA 18:3)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva
i veterinarii.

KAMANNITSKAYA, A.M.

M

Country : USSR

Category: Cultivated Plants. Fruit. Berries.

Abs Jour: Vsesoyuz., No 11, 1958, No 49116

Author : Kamnitskaya, A.M.

Inst : AS Ukrainian SSR

Title : Effect of the Conditions of Germination and Hybridization on the Formation of Resistant and High-Quality Peach Seedlings.

Orig Pub: Tr. Botan. sada AN USSR, 1957, 4, 106-113

Abstract: Some results of many-years experiments on altering the nature of peach are reported. These experiments were started by Kashchenko on a plot artificially created by him in the Acclimatization garden of the Botanical Garden of the Academy of Sciences of the Ukrainian Soviet Socialist Republic. The plot is a

Card : 1/3

M-162

KAMARNITSKIY, M.A., inzhener

Semiautomatic multi-center milling machine. Vest mash. 35 no.4:
65-67 Ap '55. (MIRA 8:6)

(Milling machines)

R/Soil Science - Physical and Chemical Properties of Soil

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1372

Author : Kamarov, B.N.

Inst : AS USSR

Title : Change in Soil Respiration and Carbon Dioxide Content
in Surface Layer of Air in Twenty-Four Hours

Orig Pub : Dokl. AN SSSR, 1958, 118, No 2, 389-291

Abstract : In turf-podzolic and drained peat-bog soils in daytime
hours 1.5 - 2.0 times more carbon dioxide gas was libe-
rated than during the nighttime. The CO₂ content in the
surface layer of air (25 - 40 cm from upper soil) was
sharply decreased with a minimum in 12 hours, and after
18 hours it rose noticeable. Observations were conduc-
ted in Bronnitskiy and Dmitrovskiy Rayons, Moskovskaya
Oblast'. -- G.N. Nesterova

Card 1/1

- 25 -

KAMAROV, V.A.; CHERNIKOVA, Ye.A.; DROZDOVA, V.M.

Determination of the surface and porosity of solids by means of
low-temperature adsorption of gases. Uch.zap.Len.un. no.131:
53-78 '49. (Adsorbents) (MIRA 9:6)

KAMAROVA, L.I.

Conference of the production of ferment preparations.
Mikrobiologiya 24 no.5:646-648 S-O '55. (MLRA 9:1)
(FERMENTATION)

KAMAROVA, Ye. S.

USSR/Cultivated Plants - Fruits. Berries.

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53845

Author : ~~Kamarova~~, Ye. S.

Inst : -

Title : Georgian Grape Varieties Which are Promising for Ukraine

Orig Pub : Vinodeliye i vinogradarstvo SSSR, 1957, No 4, 28-34

Abstract : All Georgian varieties in Ukraine are distinguished by good maturing of the shoots, by a comparative resistance to mildew and rot, and by a strong affinity with the stocks of Riparia x Rupestris. They are also distinguished by high fruit bearing capacity and by a long retention of the acidity of the berries along with their saccharinity. At the same time the majority of the varieties proved to be sensitive to drought. Even in the south of Ukraine, the varieties from lower Imeretiya (Saperavi, Rkatsiteli) do not mature every year. Chinuri, Alexandreuli, Khikhvi and Goruli mtsvane are particularly

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Card 2/2

APPROVED FOR RELEASE: 08/10/2001¹⁴⁶ - CIA-RDP86-00513R000620220014-4"

CZECHOSLOVAKIA

MACKU, M.; KAMARYT, J.; NOVAKOVA, J.; Department of Infectious Diseases, at the Hospital of the Faculty of Pediatrics (Infekcni Odd. Fak. Detske Nemocnice), Brno, Head (Vedouci) Docent Dr V. KLUSKA: Biochemical Department Research Institute of Pediatrics (Biochemicke Odd. Vyzkumneho Ustavu Pediatrickeho), Brno, Head (Vedouci) Dr V. HRSTKA.

"Activity of LDH Isoenzymes in the Cerebrospinal Fluid in Various Types of Neuroinfections."

Prague, Ceskoslovenska Neurologie, Vol 29, No 4, Jul 66, pp 269-275

Abstract [Authors' English summary modified]: Activity of LDH isoenzymes in the cerebrospinal fluid of 50 patients with various affections of the CNS was investigated. The activity appears to be a function of the number of cells found in the fluid. 4 distinct types of zymograms of LDH were found in the fluid. In cell-free fluid the activity was undifferentiated; patients with parotitic meningoencephalitis had activity of all 5 types of LDH isoenzymes; patients with purulent meningitis had the greatest activity in the 5th fraction of LDH. Some patients had maximum activity in the 1st fraction which is typical for erythrocytes. 8 Figures, 4 Western, 1/1 3 Czech references. (Ms. rec. 15 Jan 66).

ULRICH, J.; KAMARYT, J.; ZAZVORKA, Z.

The importance of the evaluation of isoenzymes of lactate dehydrogenase in ischemic diseases of the heart. Cor vasa 7 no.4:294-300 '65.

1. Departement pour les maladies internes et Laboratoires centraux de l'OUNZ, Most, CSSR.

CZECHOSLOVAKIA

KAMARÝT, J., and ZAZVORKA, Zdenek, MD, of the Central Laboratories (Ustřední laborator), OUNZ [Okresní ústav národního zdraví; Okres Institute of Public Health], Most, Zdenek ZAZVORKA, MD, director.

"Experience with the Enzymatic Estimation of the Ethanol Blood Level"

Prague, Casopis Lékarů Českých, Vol CII, No 17, 26 April 63, pp 460-464.

Abstract [Authors' English summary, modified]: The method described is faster and simpler than Widmark's method. It is highly specific and rules out possible errors occurring as a result of the nonspecificity of Widmark's method. The latter may prove useful for the differential diagnosis of obscure intoxications, loss of consciousness, and comatose conditions when a physician wants an immediate clinical diagnosis. Discussed is also a possibility of applying the reverse course of the reaction for estimating ethanol following a transformation of ethanol into acetaldehyde through oxidation. Sixteen references, including 6 Czech and 1 Slovak.

2/1

KAMARYT, J.; ZAZVORKA, Z.

Isozymes of lactate dehydrogenase. I. Methods of determination. Cas. lek. cesk. 103 no.14:373-378 3 Ap'64.

1. Ustredni laboratore OUN~~U~~ v Moste; vedouci: MUDr. Z. Zazvorka

*

ZAZVORKA, Z.; KAMARYT, J.

Isoenzymes of lactate dehydrogenase. II. Principles for clinico-biochemical values. Cas. lek. cesk. 103 no.21:572-576
22 My'64.

1. Ustredni laboratore OUNZ v Moste; bedouci: MUDr. Z.Zazvorka.

KAMARYT, Josef, inz.

Results of the controlling measurement of building structure assembly accuracy. Stav vyakum no.4:18-23 S '62.

Results of the controlling measurement of building structure assembly accuracy. Stav vyakum no.4:18-23 S '62.

1. Vyzkumny ustav stavebni vyroby, Praha.

KAMARIT, P. prom. lekar (Trencin, OUNZ)

Occurrence of disease from *Strongyloides stercoralis*. Cas. lek. cesk.
97 no.9:288-290 28 Feb 58.

1. Interne oddelenie OUNZ v Trencine, Prednosta MUDr D. Dieska.
(STRONGYLOIDIASIS, case reports (Cz))

CZECHOSLOVAKIA

STEIJFA, M., Prof. Dr; VOJTOVA, H; KAMARYT, P; SKALNIK, L.

1. First Internal Medicine Clinic (I. vnitřní klinika),
Brno (for Steijfa); 2. Microbiological Institute of
the Medical Faculty (Mikrobiologický ústav lékař.
fakulty), Brno

Prague, Vnitřní lékařství, No 10, 1963, pp 946-953

"Influenzal Pneumonia during the Influenza Epidemic of 1962."

(1)

VOJTOVA, H.; KAMARYT, P.; STEJFA, M.

Contribution to the causes of acute lung inflammations and their diagnosis. Vnitri lek. 11 no.3:226-236 Mr '65

1. Mikrobiologicky ustav lekarske fakulty v Brne (prednosta: Dr. L. Jandasek) a I. vnitri klinika v Brne (prednosta: prof. Dr. M. Stejfa).

SOVA, Zd., MVDr., Sc.C.; KOMAREK, J.; KAMARYTOVA, A.

Determination of glucose in the blood of clinically healthy horses and of horses with various internal diseases.
Veterinarni medicina 7 no.2:141-148 '62.

1. Oděleni pro choroby vnitřní, Veterinarni nemocnice, Pardubice.

KUPRIYANOVA, A.K.; VAL'TSEV, V.K.; KAMARZIN, A.A.

Precipitation from fused salts. Report No.3: Precipitation of neodymium and praseodymium from molten potassium nitrate studied by the method of amperometric titration. Izv. SO AN SSSR no.7 Ser.khim.nauk no.2:29-33 '63. (MIRA 16:10)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

5 (4)

AUTHORS: Mikhaylov, V. A., Kamarzin, A. A. SOV/79-29-4-76/77

TITLE: On the Rational Method of Expressing the Composition in the Investigation of the Density of Solutions (O.ratsional'nom sposobe vyrazheniya sostava pri izuchenii plotnosti rastvorov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1398 - 1399 (USSR)

ABSTRACT: If the formation of a system, as e. g. that of an ideal solution or of a mechanical mixture is not accompanied by a change in volume, it is known that the density is an additive function of the composition only if expressed in percents by volume. The additivity of the density is proved by the simplest method for ideal systems if it is expressed in percents by volume (Ref 1). Nevertheless, many authors (Refs 2-14) express in the case of the investigation of the density of binary systems the composition in percents by mole, and try to draw conclusions on the intensity of the chemical reaction in the system and on the change in volume in the case of its formation from the form of the obtained curves density - composition. The final conclusion drawn by I. M. Bokhovkin (Ref 7) on the intensification of the reaction of acetone with the chlorine derivatives of acetic

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APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

On the Rational Method of Expressing the Composition in the Investigation of the Density of Solutions SOV/79-29-4-76/77

acid according to the substitution of hydrogen by chlorine in the radical of acetic acid may serve as an example of a wrong conception. The determination of the density of a mixture of solvents of A. Ya. Deych (Ref 15) according to a "common additivity formula" if the composition is expressed in percentages by weight and the calculated density is then compared with the experimental one is wrong as well. Thus, the composition has to be expressed in percents by volume in the case of the investigation of the density of solutions. Only then the form of the isothermal line of density permits right conclusions on the changes in volume in the case of the formation of the system (Refs 16,17). There are 17 Soviet references.

ASSOCIATION: Institut neorganicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Inorganic Chemistry of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: July 19, 1958

Card 2/2

KAMAS, F.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Applications. Artificial and Synthetic Fibers. H

Abs Jour : Re Zh Khim., No 12, 1959, No 44347

Author : Kamars, F.; Hadobas, F.; Zamorsky, Z.; Vesely, R.

Inst : Not given

Title : A Modified Polyethyleneterephthalate

Orig Pub : Chem. prumysl, 1958, 8, No 6, 327-330

Abstract : The high regularity of the polyethyleneterephthalate structure and the considerable content of aromatic nuclei in the chain are the causes of a number of difficulties in conversion of this polymer into fiber (a comparatively high point in transition of the second order, an insufficient ability to take dye). In an effort to modify properties of polyethyleneterephthalate, the authors conducted a co-polycondensation of ethyleneglycol and terephthalic acid with dimethylisophthalate, diethyleneglycol and methyl ester of

Card 1/2

KAMAS, F.

PHASE I BOOK EXPLOITATION

SLOVAK/4311

Lacko, Vladimír, Engineer, Miloš Bačák, Engineer, František Hadobáš, Engineer,
František Kamas, Antonín Majrlich, Doctor, Engineer, and Bohumil Piller

Polyesterové vlákna (Polyester Fibers) Bratislava, Slovenské vyd-vo tech. lit-ry,
1959. 291 p. 1,200 copies printed.

Reviewers: Artur Stoy, Docent, Engineer, and Štefan Tomašovič, Engineer; Tech. Ed.:
Klára Kováčová, Engineer; Chief Ed.: Pavol Holéczy, Engineer;

Resp. Ed.: Klára Kováčová, Engineer.

PURPOSE: This book is intended for senior staff members in the chemical and tex-
tile industries, and for students in special schools. It may also be of interest
to the general reader.

COVERAGE: The book describes the treatment of raw materials for production of
polyester fibers, the technology of semiproducts, and the production, finishing,
dyeing and spinning of polyester fibers. Important theoretical concepts con-
cerning the properties of polyesters and polyester fibers are discussed. This
is the first book in Slovak on polyester fibers describing the theoretical prin-
ciples and steps in the production of synthetic fibers placing particular empha-
Card 1/12

L 13146-63

EPR/EMF(1)/EPF(c)/BDS/FS(w)-2

AFFTC/ASD/FSD-3/SSD P-4/

PC-4/HR-4/Fab-4 RM/WH/IJP(C)

G/004/63/010/004/002/004

AUTHOR: Drexler, J.; Kamas, F.; and Vesely, R.

TITLE: The use of diethyl hexyl isophthalate as a plasticizer for polyvinyl chloride.

PERIODICAL: Plaste und Kautschuk, v. 10, n. 4, 1963, 205-210

TEXT: The application of diethyl hexyl isophthalate (dioctyl isophthalate; DOI) as a plasticizer for polyvinyl chloride (PVC) was studied. The properties of PVC films stabilized with DOI were investigated by determining stress-strain characteristics, evaporation rates of plasticizer from film, film flow properties, solvation, and effects of elevated temperature. The results were compared with those obtained on films plasticized with dioctyl phthalate (DOP), dioctyl adipate (DOA), dioctyl sebacate (DOS), and 1:1 mixtures of these with DOI, respectively. The results are summarized in Table 3. The properties of the films plasticized with DOI were found to be generally similar to those plasticized with DOP (the plasticizer most often used for PVC) while the viscosity of the DOI-containing PVC paste was more stable than of those containing DOP. DOI could be added in a 1:1 ratio to DOA, or DOS without any impair-

Card 1/1

L 13146-63

G/004/63/010/004/002/004
1

The use of diethyl hexyl

ment in the cold-resistant properties of ether. Four tables, eight charts,
and 13 references (4 Czechoslovak, 9 Western).

ASSOCIATION: Institute for Rubber and Plastics Technology, Gottwaldov,
Czechoslovakia. [Abstracter's note: Original Czech name of
institute not given.]

Card 2/32

KAMAS, Michal, ins.

Compensation of the mine power factor. Energetika Cz 13 no.1:
31-33 Ja '63.

1. Dul Nosek, n.p., SKD-Kladno.

KAMASHCHENKO, A., starshina 2-oy stat'i; POVETKIN, V., starshiy matros;
MEDENETS, L., starshiy matros

Thanks to a rearrangement of the vanes. Starsh.-serzh. no.5:31 My '63.
(MIRA 16:10)

KAMASHEV, A.V., inzh.

Cutting wood with the knives of a brush chopper. Trudy
VNIIGIM 35:113-120 '60. (MIRA 14:9)
(Agricultural machinery)

YAMASHEV, F.K., inzh. (Kazan')

Automatic reporting signaling. Put' i put. khoz. no. 8:7 Ag '58.
(MIRA 11:8)

(Railroads--Signaling)

KAMASHEV, I.K.; FILICHKIN, G.L.; BEDERSON, A.M., red.; SUVORINA,
T.M., red.; NEUDAKINA, N.G., tekhn. red.

[Economics of the lumbering industry] Voprosy ekonomiki
lesnoi promyshlennosti; sbornik statei. Perm', Permskoe
knizhnoe izd-vo, 1959. 176 p. (MIRA 16:10)
(Perm Province--Lumbering)
(Perm Province--Wood- using industries)

KAMASHINA, V.P., kand.med.nauk (Odessa)

Errors in the diagnosis of sialolithiasis. Probl. chel.-lits. khir.
no.1:133-137 '65. (MIRA 18:10)

KUZ'MIN, V.N.; KAMASHEV, Yu.M.

Using Hall e.m.f. transducers for measuring the dynamics of
magnetic fields of dispersion in pulsed accelerators, Izv. vys.
ucheb. zav.; fiz. no.4:158-162 '59. (MIRA 13:3)

1. Tomskiy politekhnicheskii institut imeni S.M. Kirova.
(Particle accelerators) (Magnetic fields)

L 29715-66 EEC(k)-2/EWT(d)/EWT(m)/FSS-2/EWP(w) IJP(c) EM/WW/BC
 ACC NR: AP6015583 (N) SOURCE CODE: UR/0146/66/009/002/0101/0106

AUTHOR: Kamashev, Yu. M.

ORG: Tomsk Polytechnical Institute im. S. M. Kirov (Tomskiy politekhnicheskii institut)

TITLE: Effect of radial rigidity of the gyrochamber on gyroscope vibrations

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 101-106

TOPIC TAGS: gyroscope suspension, gyroscope system, vibration analysis

ABSTRACT: The amplitudes of forced vibrations¹⁶ of a gyroscopic instrument are determined for the cases where the rotor is dynamically out of balance with regard to the radial rigidity of the gyrochamber. Equations of motion are given for the gyroscope assuming that the deviation from perpendicular for the frames in the suspension is small and that the center of gravity for the rotor coincides with the point of intersection of the axes of the Cardan suspension. It is shown that the rotor describes elastic oscillations with respect to the gyrochamber when radial rigidity is reduced and that these oscillations are not transmitted to the internal axis of the suspension. Orig. art. has: 3 figures, 11 formulas.

SUB CODE: 20/7/ SUBM DATE: 03Apr65/ ORIG REF: 002

UDC: 531.383

Card 1/1 (C)

KAMASHEV, Yu.M.

Effect of the rigidity of the gyroscope case and of the
gyrowheel shaft on the motion of a gyroscope. Izv. vys.
ucheb. zav.; prib. 7 no.1:95-102 '64. (MIRA 17:9)

1. Leningradskiy institut aviatsionnogo priborostroyeniya.

ACCESSION NR: AP4019000

S/0146/64/007/001/0095/0102

AUTHOR: Kamashev, Yu. M.

TITLE: Effect of gyro-case and rotor-axle rigidity on the gyroscope motion

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 1, 1964, 95-102

TOPIC TAGS: gyro, gyroscope, gyro case, gyro rotor, gyro rotor axle, gyro motion, gyro structure deformation, gyro structure rigidity

ABSTRACT: A theoretical investigation is offered of the effect of elastic deformation of the gyro case upon the motions of a gyro with three degrees of freedom. Kinetic and potential energies of the gyro are determined by solving differential equations set up in accordance with the second Lagrange method. It is found that elastic members in the gyro system cause a decrease in its nutational oscillation frequency and also increase the frequency of its elastic oscillations. The radial rigidity C_m of the gyro-case end lids should meet this

Card 1/2

ACCESSION NR: AP4019000

condition: $C_{m \text{ crit}}^* < C_m > C_{m \text{ crit}}$, in order to avoid resonance conditions.
Here:

$$C_{m \text{ crit}}^* = J_y \cdot \frac{J_{x_p}^2 \cdot \cos^2 \theta_0 - J_C J_{y_p}}{J_{x_p}^2 \cdot \cos^2 \theta_0 - J_B J_C} \cdot \Omega^2,$$

$$C_{m \text{ crit}} = (J_C - J_{y_p} \cdot \cos^2 \theta_0 \cdot \sin \theta_0) \cdot \frac{J_{x_p}^2 - J_B J_{y_p}}{J_{x_p}^2 \cdot \cos^2 \theta_0 - J_B J_C} \cdot \Omega^2,$$

where J are moments of inertia, θ_0 is the deviation of the gyro principal axis from the stationary system of coordinates. Orig. art. has: 3 figures and 22 formulas.

ASSOCIATION: Leningradskiy institut aviatsionnogo priborostroyeniya
(Leningrad Institute of Aviation Instruments)

SUBMITTED: 25May63

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: AE, CG

NO REF SOV: 004

OTHER: 001

Card 2/2

YEGOROV, A.P., shofer; VOYTANIK, N.M., shofer; KOZINTSEV, D.K., shofer;
POLULYAKH, V.Ya., shofer; KAMATSKIY, V.N., shofer; VARSHAVSKAYA,
A.A., shofer; VATULIN, G.N., shofer; SHANDURSKIY, P.T., shofer;
YEMEL'YANOV, G.A., shofer; VERBOV, A.G., shofer; DANILETS, P.P.,
shofer; BOGANCHENKO, V.A., shofer; PRUDNIKOV, A.F., shofer;
V'YUNIKOV, S.I., shofer; SOLOVEY, I.N., shofer; MURASHKO, D.F., shofer

We prize our workers' honor. Avt. transp. 40 no.12:3-4 D '62.
(MIRA 15:12)

1. Simferopol'skiy avtobusnyy park (for Yegorov, Voytanik).
2. Simferopol'skiy taksomotornyy park (for Murashko, Kozintsev).
2. Kerchenskiy avtobusno-taksomotornyy park (for Polulyakh).
4. Yevpatoriyskiy avtobusno-taksomotornyy park (for Kamatskiy).
5. Yaltinskiy taksomotornyy park (for Varshavskaya). 6. Feodosiyskiy taksomotornyy park (for Varshavskaya). 7. Sevastopol'skiy avtobusno-taksomotornyy park (for Yemel'yanov). 8. Simferopol'skiy gruzovoy avtopark (for Verbov). 9. 2-y Simferopol'skiy gruzovoy avtopark (for Danilets).
10. Bakhchisarayskiy avtopark (for Boganchenko). 11. Sevastopol'skiy avtopark (for Prudnikov). 12. 1-y Simferopol'skiy gruzovoy avtopark (for V'yunikov, Solovey).

10

Preparation of thiophosphinic acids containing asymmetric phosphorus. A. E. ARBUZOV AND G. KH. KAMAL. *J. Russ. Phys.-Chem. Soc.* 61, 2037-42 (1929).—Various acids of the types PRR'SOH and PRR'SSH have been prep'd. with the object of obtaining them in optically active forms. The only one to be obtained cryst. is phenylbenzylmonothiophosphinic acid, which is being investigated further. $\text{PPh}(\text{SEt})_2$, b_p , 143-4°, d_4^{20} 1.1417, prep'd. by treating mercaptan (1 mol.) in ether with Na and phosphorus (0.5 mol.), forms a cryst. comp'd. with CuBr. At 180° it combines with S giving rise to the comp'd. $\text{C}_{12}\text{H}_{11}\text{S}_2\text{P}$, b_p , 191-2°, d_4^{20} 1.2201, which is hydrolyzed by HCl to the cryst. salt, $\text{PPh}_2(\text{SEt})\text{ONa}$, but the corresponding acid could not be obtained. When heated with EtI in a sealed tube at 130°, the thio ether, $\text{PPh}(\text{SEt})_2$, undergoes isomerization to form $\text{PPhEt}(\text{SEt})\text{S}$, b_p , 160-70°, d_4^{20} 1.1693, which, with HCl , gives the cryst. Na phenylethylmonothiophosphinate, $\text{PPhEt}(\text{ONa})\text{S}$, but the corresponding acid was obtained only as a sirup. The isobutyl ether, $\text{PPh}(\text{SC}_4\text{H}_9)_2$, b_p , 191-2°, d_4^{20} 1.0637, forms $\text{S}:\text{PPh}(\text{SC}_4\text{H}_9)_2$, with flowers of S, and, when treated with $\text{BrCH}_2\text{CO}_2\text{H}$, yields a product giving the cryst. Na salt, $\text{S}:\text{PPh}(\text{ONa})\text{CH}_2\text{CO}_2\text{Na}$; the corresponding acid and its cinchonine and brucine salts did not crystallize. The action of $\text{ICH}_2\text{CH}_2\text{CO}_2\text{Et}$ on the thio ether, $\text{PPh}(\text{SC}_4\text{H}_9)_2$, gives $\text{C}_{12}\text{H}_{11}\text{O}_2\text{S}_2\text{P}$, b_p , 200-8°, but hydrolysis of this failed to give a cryst. acid. Treatment of the thio ether, $\text{PPh}(\text{SEt})_2$, with PhCH_2Cl at 200° gave $[\text{S}:\text{PPh}(\text{CH}_2\text{Ph})\text{Sb}(\text{Ph})_2]$, m , 145-6°, and an oily comp'd. $\text{S}:\text{PPh}(\text{CH}_2\text{Ph})\text{SEt}$, b_p , 210-8°, d_4^{20} 1.1826. The action of PhCH_2Cl on the ether $\text{PPh}(\text{SC}_4\text{H}_9)_2$ at 210° gave the comp'd., m , 145-6°, similarly obtained from the ether, $\text{PPh}(\text{SEt})_2$, but vacuum distn. of the residue led to rapid decompn., so that this residue was hydrolyzed directly, with formation of phenylbenzylmonothiophosphinic acid, $\text{S}:\text{PPh}(\text{CH}_2\text{Ph})\text{OH}$, m , 173-4°. B. C. A.

[illegible]

Preparation of phosphonium compounds with an asymmetrical atom of phosphorus. Ch. Kim, Kamal, *J. Gen. Chem.* (U. S. S. R.), 2, 824-8 (1932); cf. C. J. 24, 1930. For the prepn. of phosphonium compds. with an asym. P atom into their optical isomers there were prepd. quaternary P deriva. of the type $R_1R_2R_3R_4P^+X^-$ (X^- = acid radical). The initial phosphine was obtained from $PhEt(PH_2CH_2)P$ by decamp. at high temp. in CO_2 . The reaction proceeds probably thus: $PhEt(PH_2CH_2)P \rightarrow PhEt(PH_2CH_2)P + C_2H_5 + HCl$ and $PhEt(PH_2CH_2)P \rightarrow Ph(PH_2CH_2)_2P + C_2H_5 + HCl$ of which were isolated $PhEt(PH_2CH_2)P$, $PhEt_2P$ and $Ph(PH_2CH_2)_2P$. By the interaction of $PhEt(PH_2CH_2)P$ and $PhEt(PH_2CH_2)P$ with Ag salts of α,ω - and β,γ -bromocamphorsulfonic acids were obtained non-crystallizable sirupy products, the prepn. of which into optical isomers was impossible. $PhEt_2P$ was prepd. by modifying the method of Michaelis (*Ann.* 181, 283 (1870)) whereby a mixt. of C_2H_5I , PCl_5 and $AlCl_3$ was continuously heated 36 hrs. in a current of CO_2 . The following compds. were prepd. in a current of CO_2 : $PhEt_2P$, b.p. 66-7°, was obtained in 70-80% yield, from $PhEt_2P$ and $EtMgBr$ (Melenbrheimer, et al., C. A. 21, 60). $PhEt(PH_2CH_2)P$, by heating $PhEt_2P$ and 16 g. of $PhCH_2Cl$ by heating in an oil bath. $PhEt(PH_2CH_2)P$, which was $PhEt_2P$ and 16 g. of $PhCH_2Cl$ by heating in an oil bath 8 g. $PhEt(PH_2CH_2)P$ and 3.5 g. $AcCH_2Cl$, then by heating 3 hrs. at 120° in an oil bath 8 g. $PhEt(PH_2CH_2)P$ and 3.5 g. $AcCH_2Cl$, then by purifying, and digesting with abs. Et_2O to remove impurities. $PhEt(PH_2CH_2)P$, from R_2CH_2Br in 30 cc. Et_2O , and then evap. the Et_2O . $PhEt(PH_2CH_2)P$, 170-171°, from 8 g. $Ph(PH_2CH_2)_2P$ in 30 cc. of abs. Et_2O and 10 g. $EtBr$ in 10 cc. Pr_2O .

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PROCESSES AND PROPERTIES INDEX

Preparation of asymmetric organic compounds of arsenic with the coordinate number three. I. G. Kh. Kamel. *Trans. Butlerov Inst. Chem. Tech. Kazan No. 1, 1978 (1984); cf. C. A. 28, 12819.*—The ternary arsenics with a coordinate no. 3 with 3 different radicals are examples of the arsinocarboxylic acids of the type $R_1R_2AsR_3CO_2H$ and the structure $[R_1R_2AsR_3CO_2]^{3-}$ (Werner). The complex of the internal sphere is asym., while the H of the external sphere can be substituted for the sepn. of the compd. into optically active isomers. Melts ($p\text{-BrC}_6\text{H}_4$)As (I) and Me ($p\text{-MeC}_6\text{H}_4$) ($p\text{-BrC}_6\text{H}_4$)As (II) were prepd., but failed to give the corresponding carboxylic acids by the Grignard reaction and by the nitrile method of Rosenmund (C. A. 14, 1646). A mixt. of MeEtAsI and PhMgBr in Et₂O refluxed 2 hrs. and decompd. with aq. NH₄Cl gave a 47% yield of I, b. 132–3°, d_4^{25} 1.558, d_4^{20} 1.5559. Me ($p\text{-MeC}_6\text{H}_4$)AsI and PhMgBr in Et₂O treated as above gave 12.1% yield of I, b. 200–40°, d_4^{25} 1.57, probably contaminated with some decompn. products. Chas. Blanc

ASB-36A METALLURGICAL LITERATURE CLASSIFICATION

[illegible]

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The preparation of asymmetric secondary arylarsinic acids. Cf. m Kh. Kamal. Trans. Kirov. Inst. Chem. Tech. USSR NO. 3, pp 68(1938).—For the prepn. of diarylarinic acids the method of Bart (C. A. 17, 62) is superior to that of Blicke and Smith (C. A. 23, 2035). Blicke's phenyl-*p*-tolylarinic acid (I) was probably a mixt. of unoxidized tetraarylarinic oxide and I. Pure I mp. 160–60°. I (m. 166–60°) was prepd. in 41.6% yield from PhAsO and *p*-MeC₆H₄I₂Cl, and in 35.4% yield from *p*-MeC₆H₄AsO and PhN₂Cl. PhMgBr and *p*-MeC₆H₄AsO gave impure I, m. 140–60°, in 19.4% yield. The diazonium compd. from *p*-nitroaniline (73 g.) with 80 g. PhAsO gave *p*-nitrophenylphenylarinic acid, m. 141° from alc. The NH₄, Ba and Na salts are sol. in H₂O and alc. The *p*-MeC₆H₄NH₂ salt, m. 78–9°; the PhNH₂ salt, m. 162–6° Lewis W. Hutz

ca

The stereochemistry of trivalent arsenic. II. Preparation of *o*-, *m*- and *p*-(methylphenylarsyl)benzoic acids and experiments to split them into optically active compounds. Gilman, K. Kamal. *Ber.* 60B, 1883-8(1935); *J. Gen. Chem.* (U. S. S. R.) 6, 178-81(1936); cf. C. A. 29, 4746. — Efforts failed to split *m*-(methylphenylarsyl)benzoic acid (I) into optically active compounds. The strychnine salt, crystalg. with difficulty from concd. solns., m. 155-6°, $[\alpha]_D^{25} -10.8^\circ$; the quinine salt m. 160-70°, $[\alpha]_D^{25} -85.01^\circ$. Both salts of the *p*-compd. of I, crystalg. in needles, yield optically inactive acids. The *o*-compd. of I formed salts with alkalis which did not crystallize. Show addition of 100 g. PhAsO (II) and 120 g. MeI in 10-g. portions to a mixt. of 120 cc. 10 *N* NaOH and 120 cc. 95% alc., refluxing 5 hrs., neutralization with HCl and 100 cc. excess HCl, and passing SO₂ through the soln., yields 149 g. dark yellow oily methylphenyliodoarsine (III), b. 130-1°. Slowly adding 50 g. III with cooling to 4.13 g. Mg and 29.03 g. *p*-MeC₆H₄Br yields after boiling for 2 hrs., decampa. with NH₃ and estn. with Et₂O, 30.9 g. The corresponding *m*-compd. (V), prepd. in 25.2-g. yield from 4.13 g. Mg, 29.08 g. *m*-MeC₆H₄Br and 50 g. III, b. 165-6°, d₄ 1.2871, d₁₅ 1.2563, n_D 1.6190. The *o*-compd. (VI), prepd. in 14.8-g. yield from 2.23 g. Mg, 15.7 g. *o*-MeC₆H₄Br and 27 g. III, b. 162-3°, d₄ 1.2765, d₁₅ 1.2563, n_D 1.6210. IV (25 g.) and 41.3 g. KMnO₄ in 750 cc. H₂O

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form methylphenyl-*p*-carboxyphenylarsine oxide-HCl (VII), m. 150-2°, sol. in H₂O and alc., insol. in Et₂O. Passing H₂S for 1 hr. through VII in water forms methylphenyl-*p*-carboxyphenylarsine sulfide, m. 150-60°. Passing SO₂

through 20 g. VII in 200 cc. H₂O and 1 cc. of alc. I produces *p*-(methylphenylarsyl)benzoic acid (VIII), m. 149-51°, sol. in alc., Et₂O, CHCl₃ and acetone, insol. in H₂O. The NH₄ salt of VIII is sol. in H₂O. Reactions of 4 g. and 2 g., resp., of VIII in 25 cc. and 10 cc., resp., of alc. with 4 g. strychnine in 150 cc. alc., and 2.2 g. quinine in 50 cc. alc., resp., yield the strychnine and quinine salts, m. 183-5° and 210-1°, resp. Methylphenyl-*m*-carboxyphenylarsine oxide-HCl (IX), prepd. from 20 g. V and 35 g. KMnO₄ in 200 cc. H₂O, m. 148-50°, sol. in H₂O and alc. Passing H₂S for 1 hr. through IX in water forms methylphenyl-*m*-carboxyphenylarsine sulfide, m. 134-5°. The *o*-compd. of VII, prepd. from 13.9 g. VI and 22.9 g. KMnO₄ in 400 cc. H₂O, m. 226-7°. The corresponding sulfide, m. 164-6°, forms the *o*-compd. of I on reduction with SO₂. A. P. R.

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH ORDERS	
ca				10	
<p>Diisobutylphosphonacetic ester. (11111) Kanao. <i>Trans. Amer. Chem. Soc.</i> 62, 334 (1940). (iso-BuO)₂P(O)OH was added by drops to the alc. soln. of iso-BuONa. After cooling, the soln. (neutral) of Na diisobutylphosphate was treated with ClCH₂CO₂Et, yielding after distn. in vacuo 32.5% Et diisobutylphospho- nacetate, (iso-BuO)₂P(O)CH₂CO₂Et, m. 170-1°, d₄²⁰ 1.0003, d₄²⁰ 1.0212. The same product was obtained in smaller yield (30.8%) on using a smaller amt. of acid, i. e., in the presence of about 10% of alkali, and the yield was 25.3% in the presence of excess (10%) acid. The product was saponified with 15% HCl in a sealed tube at 130° for 3 hrs., yielding phosphonacetic acid.</p> <p style="text-align: right;">A. A. Podgorniy</p>					
<p>458-55A METALLURGICAL LITERATURE CLASSIFICATION</p>					
15000 570000000		15000 570000000		15000 570000000	
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1ST AND 2ND CROSS		PROCESS AND PROPERTIES INDEX		3RD AND 4TH CROSS	
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<p><i>ca</i></p> <p>The stereochemistry of trivalent arsenic. III. Preparation of <i>p</i>-(ethoxyphenylarsyl)benzoic acid and experiments to split it into optically active compounds. (III) in <i>Kamal. J. Gen. Chem. (U. S. S. R.)</i> 10, 733-5 (1940); cf. <i>C. A.</i> 30, 4830⁹.—Efforts failed to split <i>p</i>-(ethoxyphenylarsyl)benzoic acid (I) into optically active compds. Ethoxyphenyl-iodoarsine (II) was prepd. from PhAsO and EtI (instead of MeI) and converted to I by the methods used in prep. <i>p</i>-MeEtAsO₂CO₂H. II, b. 130-40°, d₄²⁰ 1.8408. Ethoxyphenyl-<i>p</i>-tolylarsine, b. 173.5-4.5°, d₄²⁰ 1.2188, n_D²⁰ 1.511. Ethoxyphenyl-<i>p</i>-carboxyphenylarsine oxide, m. 154-5° (decompn.). Ethoxyphenyl-<i>p</i>-carboxyphenylarsine sulfide (const. were not detd.). I, m. 124-5°; strychnine salt, m. 204-5°; quinine salt, m. 182-3°. C. H.</p>					
ASR-31A METALLURGICAL LITERATURE CLASSIFICATION					
FROM SYNDICATE					
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FROM BOWLING					

1ST AND 2ND SERIES										3RD AND 4TH SERIES									
PROCEDURES AND PROPERTIES INDEX																			
<div style="text-align: center;">COMMON ELEMENTS</div> <div style="text-align: center;">MATERIALS INDEX</div>		<div style="float: right; font-size: 2em; margin-right: 10px;">10</div> <div style="float: left; font-size: 2em; margin-left: 10px;">ca</div> <div style="clear: both;"></div> <p>Some alkyl esters of aryl- and diarylarsonous acids. Gills-Samuel and V. M. Zoromstova. J. Gen. Chem. (U. S. S. R.) 10, 921-6 (1940). If arsenious acid exists in 2 tautomeric forms, $As(OH)_3$ and $HA=O(OH)_2$, the alkyl esters of aryl- and diarylarsonous acids should show properties analogous to those of phosphorous acid esters. $Ph_2As(OEt)_2$, bp 119-20°, d₄ 1.6641, d₂₀ 1.6417, n_D 1.4688, yield 81.4%; $Ph_2As(OEt)_2$, bp 117-18°, d₄ 1.3884, d₂₀ 1.3621, n_D 1.5537, yield 81.5%; $Ph_2As(OEt)_2$, bp 139-40°, d₄ 1.3524, n_D 1.5100, yield 57.2%; $(iso-PrO)_2AsPh$, bp 118-19°, d₄ 1.3461, d₂₀ 1.3220, n_D 1.5109; $PhAs(OEt)_2$, bp 147-8°, d₄ 1.3428, d₂₀ 1.3208, n_D 1.5611, yield 80.6%; $(iso-BuO)_2AsPh$, bp 144-4.5°, d₄ 1.3267, n_D 1.5108; $(iso-AmO)_2AsPh$, bp 163-4.5°, d₄ 1.2908, d₂₀ 1.2635, n_D 1.6492, yield 83.4%; $Ph_2As(OEt)_2$, bp 166.5-7°, d₄ 1.2764, d₂₀ 1.2505, n_D 1.4025, yield 84.3%; $Ph_2As(OEt)_2$ (II), bp 174-5°, d₄ 1.2434, d₂₀ 1.2248, n_D 1.3023; $Ph(p-C_6H_4)_2AsOEt$, bp 178-80°, d₄ 1.2921, d₂₀ 1.2690, n_D 1.6120, yield 85.3%; $Ph(p-C_6H_4)_2AsOEt$, bp 188-9°, d₄ 1.3121, d₂₀ 1.3008, n_D 1.6905, have been prep'd. from $PhAsCl_2$, Ph_2AsCl and $Ph(p-C_6H_4)_2AsCl$, resp., and the corresponding Na alcoholate. The above compds. could not be homerized by heating with alkyl iodide. I. C₆H₅, m. 160-3° (decompn.). II. C₆H₅, m. 140-2°. The b. ps. of some of the above compds. are compared with those of analogous derivs. of phosphorous acid and the results, given in a table, show that the derivs. of As do not have always a higher b. p. than the corresponding derivs. of P. Gertrude Berend</p>																	
		<div style="text-align: right; font-size: 1.2em; margin-right: 10px;">Lab. Organic Chem, Kazan Sci. Res. Inst. in. A-M. Butlerov.</div>																	
ASTM-AIA METALLURGICAL LITERATURE CLASSIFICATION																			
FROM SYNONYMS										FROM BOWEN									
(number 2)										(number 1)									
(number 3)										(number 4)									

Asymmetrical analogs of cineolyl oxide. Gil'm Kamurov and V. M. Zornastroya. *J. Gen. Chem.* (U. S. S. R.) 10: 1548-72 (1940).—A yield of 11.6 g. bis(methylethylarsine oxide) (I) was obtained from 27 g. MeEtAsI, bp 73-74° (Wigren, bp 67-8°, C. A. 24, 4259). I (10.6 g.) in 8.5 cc. of 10 N NaOH was agitated 30 hrs. with a soln. of 7.8 g. $\text{CICH}_2\text{CO}_2\text{H}$ neutralized with NaOH. HCl was added to the mixt. until acid to Congo red. The solvent was evapd. on a water bath, NaCl was filtered off and the filtrate put in a desiccator over H_2SO_4 . After reduction of the aq. soln. of methylethylarsanylacetic acid with H_2S a noncrystallizable oily liquid with a very unpleasant odor was obtained. To a mixture of 57.5 cc. 10 N NaOH soln. and 65 cc. 96% alc. 10 g. EtAsI was added with cooling. The resulting clear soln. was treated with 20.5 g. iso-PrBr in small portions. The mixt. was heated 5 hrs. on a water bath, after which the alc. was driven off. The product was acidified with HCl and H_2S was passed through the mixt. A dark brown oil sepd. It was washed with H_2O and dried over CaCl_2 . Vacuum distn. (13-14 mm.) gave the following fractions: 87-90°, 6.0 g.; 90-125°, 1.6 g.; 125-7°, 16.4 g. Upon redistn. the 1st fraction b. 87-8°, d_4^{20} 1.8163, d_4^{25} 1.7955, n_D^{20} 1.830. Ethylisopropylidoarsine (II) is a yellow mobile liquid, sol. in ether, alc., C_6H_6 , insol. in H_2O . It is a lachrymator. The 3rd fraction was ethyldidoarsine. I (6 g.) was mixed with 5 cc. 10 N NaOH and cooled. A yield of 76% theory (2.2 g.) of bis(ethylisopropylarsine) oxide, bp 180-2°, was obtained. It is a colorless oily liquid of unpleasant odor. Bis(methylphenylarsine) oxide (80-90% yield), d_4^{20} 1.4624, d_4^{25} 1.4409, n_D^{20} 1.6250; bis(ethylphenylarsine) oxide (66% yield), d_4^{20} 1.3851, d_4^{25} 1.3656, n_D^{20} 1.6102; ethylbenzylidoarsine, bp 160-70°, d_4^{20} 1.2301; bis(ethylbenzylarsine) oxide (78% yield), bp 174-5°, d_4^{20} 1.3918, n_D^{20} 1.6900; and bis(phenylmethylarsine) oxide, m. 78-9° (Blicker, m. 75-7°, C. A. 24, 43), b. 232-3°, were analogously prepd. David Aclay

GIL'M KAMAI

Z. L. Khisamova and Gil'm Kamai - "The action of carbon tetrachloride on esters of p-tolyl phosphinous acid." (p. 1162)

SC: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1940, Vol. 20, No. 7.

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1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
<p><i>Ca</i></p> <p style="text-align: right;"><i>10</i></p> <p>The action of asymmetric secondary base arises on the sodium derivative of malonic ester. G.M. Kamal J. Gen. Chem. (U.S.S.R.) 14, 245-4 (1944) (English summary). —EtPrAsI or MePhAsI react with NaCH(CO₂Et)₂ to give (EtO₂C)₂CHCH(CO₂Et)₂ and the corresponding cacodyl or cacodyl oxide. H. M. Leicester</p> <p>Lab. Org. Chem, Kazan Chem-Tech. Inst. in. S.M. Kirov</p>																			
<p>ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									

KAMAI, G. KH.

The isopropyl ester of benzenephosphonous acid. A. E. Arbuzov, G. Kh. Kamai, and O. N. Belorosskova (Kazan Chem. Tech. Inst.), *J. Gen. Chem. (U.S.S.R.)* 15, 768-9 (1945).--When iso-PrOH and PhNMe₂ in dry Et₂O are cooled and treated with PhPCh in a CO₂ atm., they form a distillate, 60% of which is di-iso-Pr benzenephosphonite (I), b_p 121-2°, d₄²⁰ 1.0103, d₄²⁵ 0.9952, n_D²⁰ 1.5021, and 16% iso-Pr phenylisopropylphosphinite (II), b_p 146-7°, d₄²⁰ 1.0057, d₄²⁵ 0.9813, n_D²⁰ 1.4920, formed by isomerization of I. When I is heated to 150° in the presence of iso-PrI (III) it liberates MeCH:CH₂ and forms phenylisopropylphosphinic acid, m. 61-2°, which gives cryst. Na, K, Ca, and Ba salts. When I and III are allowed to stand 10 days at room temp., 44.1% isomerization to II occurs. Addn. of a little PhNMe₂ increases the isomerization to 95%.

H. M. Leicester

Lab. Organic Chem,

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ACTION OF CARBON TETRACHLORIDE ON ALKYL ESTERS OF PHOSPHOROUS ACID. G. Kamel and L. P. Hgorova (Kazan Chem. Tech. Inst.). *J. Gen. Chem.* (U.S.S.R.) 16, 1621-6 (1946) (in Russian). —Although CHCl_3 could not be induced to react with $(\text{RO})_2\text{P}$, it was shown that CCl_4 readily enters the well-known isomerization reaction with formation of dialkyl esters of trichloromethanephosphonic acid, $(\text{RO})_2\text{P}(\text{O})\text{CCl}_3$. The reactions were conducted by heating equimol. mists of CCl_4 and $(\text{RO})_2\text{P}$ 3 hrs. under reflux; the yields, although not stated in all cases, were good and ranged upward from 40% (iso-Pr ester). The following products were obtained: *R* = *Me*, b_p 110-12°, b_d 121-2°, d_4^{25} 1.4840, d_4^{20} 1.4764, n_D^{25} 1.4580; *Et*, b_p 129-30.5°, b_d 122-3°, d_4^{25} 1.5220, d_4^{20} 1.5014, n_D^{25} 1.4583; *allyl*, b_p 136-8°, d_4^{25} 1.1710, d_4^{20} 1.5000, n_D^{25} 1.4582; *Pr*, b_p 144-5°, d_4^{25} 1.5003, d_4^{20} 1.2450, n_D^{25} 1.4582; *iso-Pr*, b_p 127-30°, d_4^{25} 1.3360, d_4^{20} 1.3200, n_D^{25} 1.4478; *Bu*, b_p 145-6°, d_4^{25} 1.1814, d_4^{20} 1.1670, n_D^{25} 1.4521; *iso-Bu*, b_p 144-5°, d_4^{25} 1.2114, d_4^{20} 1.1943, n_D^{25} 1.4487. The esters are mobile colorless liquids which darken on exposure to light; hydrolysis with 15% HCl at 160° gives the corresponding alkyl chloride, CO_2 , and H_3PO_3 . G. M. Kozolapoff

Lab. Org. Chem.

CA

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Esters of cacodylphosphonic acid. G. Kamal and O'N. Belorossova. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1947, 101-6. —By using an Arbuzov reaction a no. of cacodylphosphonic acid esters were prepd. in good yields. To 115 cc. 10 N NaOH and 150 cc. 95% EtOH was added 100 g. EtAsI, followed by 50 g. BuBr, and the mixt. was boiled 8 hrs. to give 70.3 g. EtBuAsI, b, 107-8°, b₁ 112-13°, d₄ 1.7190, d₂₀ 1.0818. Similarly, 60 g. iso-AmBr and 100 g. EtAsI gave 79.7% iso-AmEtAsI, b, 118-19°, d₄ 1.8151, d₂₀ 1.7867. PhAs(OH)₂ (75 g.) with 70 g. BuBr in alc. NaOH gave 75% PhBuAsBr, b, 147-8°, d₄ 1.3860, d₂₀ 1.3062; similarly, 47 g. allyl bromide and 60 g. PhAsO in alc.-aq. NaOH gave 50% Ph(C₃H₅)AsBr, b, 138-9°, d₄ 1.4912, d₂₀ 1.4736. From 20 g. EtBuAsI and 11.5 g. (EtO)₃P after standing overnight was obtained 100% [EtBuAsP(OEt)]₃, m. 182-3° (from EtOH-Et₂O),

which results from addn. of EtI to the primary reaction product, EtBuAsP(OEt)₂. To (EtO)₃PONa (from 1.50 g. Na and 9.6 g. (EtO)₃POH) in 100 cc. cold Et₂O was added 20 g. EtBuAsI and the mixt. was boiled 3 hrs., filtered, and distil. to give EtBuAsP(OEt)₂, b, 112-13°, d₄ 1.3154, d₂₀ 1.1865. Similarly, iso-AmEtAsI gave 52% iso-AmEtAsP(OEt)₂, b, 118-20°, d₄ 1.2858, d₂₀ 1.2718 (use of the K deriv. gave but 43% yield); EtPhAsI gave EtPhAsP(OEt)₂, b, 144-5°, d₄ 1.2869, d₂₀ 1.2734. Ph(CH₂:CHCH₂)AsI with either (EtO)₃P or (EtO)₃PONa gave Ph(C₃H₅)AsP(OEt)₂, b, 142-3°, d₄ 1.2568. Ph₂AsCl and (EtO)₃PONa gave Ph₂AsP(OEt)₂, b, 170-7°, d₄ 1.2971, d₂₀ 1.2845; BuPhAsBr gave BuPhAsP(OEt)₂, b, 162-3°, d₄ 1.3111, d₂₀ 1.2345. The compds. on heating to 150° with 15% HCl broke down completely, showing rather poor stability of the P—As bond.

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The reaction of the preparation of phosphonate esters. A. R. Arhizov and G. Kapanov (Kazan Sect., Acad. Sci.). *J. Gen. Chem. (U.S.S.R.)* 17, 2149-57 (1947).—The previously reported prepn. of $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$ from $\text{EtO}_2\text{CCH}_2\text{Cl}$ and NaOP(OR)_2 in EtOH (C.A. 23, 4443) was repeated in view of results of Kosolapoff (C.A. 40, 4058) who obtained lower yields of the product in EtOH than in inert solvents. Na (11.5 g.) in 250 ml. abs. EtOH , treated with 69 g. $(\text{EtO})_2\text{POH}$ dropwise, heated 2 hrs. on a steam bath, treated dropwise with stirring and cooling, with 63 g. $\text{ClCH}_2\text{CO}_2\text{Et}$, boiled 3 hrs. with charcoal, allowed to stand overnight, filtered, and distd., gave 90.1 g. (80.5%) $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$, b_p 141-3°, d_4^{20} 1.188. To 5.8 g. Na in EtOH was added 23.5 g. PhOH and the EtOH removed *in vacuo*, giving colorless dry PhONa , a white mass; to this, suspended in 200 ml. dry Et_2O , was added 34.5 g. $(\text{EtO})_2\text{POH}$, followed by heating 1 hr. on a steam bath; the soln. was treated, with stirring and cooling, with 31 g. $\text{ClCH}_2\text{CO}_2\text{Et}$, then boiled 3 hrs. with charcoal, allowed to stand overnight, filtered, and the filtrate distd., giving 31.8 g. (57%) $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$. The small drop in yield ($\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$) is cited as evidence of the rapid rate of reaction of $(\text{EtO})_2\text{PONa}$ with the chloroacetate, which explains the high yields obtained in this reaction when EtOH is used as the solvent. The reaction

of $\text{ClCH}_2\text{CO}_2\text{Et}$ with RONa is a relatively slow one. Na (6.4 g.) in 175 ml. abs. EtOH and 34.5 g. $\text{ClCH}_2\text{CO}_2\text{Et}$ (6.4 g.) in 175 ml. abs. EtOH and 34.5 g. $\text{ClCH}_2\text{CO}_2\text{Et}$, boiled 3 hrs. as above gave 19.3 g. (53%) $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$, b_p 141-3°, d_4^{20} 1.188. A similar reaction using NaOEt gave different results in EtOH , because in this case the acyl chloride reacted preferentially with NaOEt or EtOH and no phosphonate ester was formed at all; in petr. ether, however, 55% $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et}$, b_p 130-1°.

The reaction in EtOH yielded as the only identifiable products $(\text{EtO})_2\text{POH}$ and $(\text{EtO})_2\text{CO}$. The lack of phosphonation in this case is not due to alcoholysis of the phosphonate, as the latter is unchanged on boiling 6 hrs. with EtOH . Following the prepn. of phosphonate esters reported by Kosolapoff (see above), the following were prepd. in good degree of purity: $(\text{MeO})_2\text{POCH}(\text{CO}_2\text{Et})$, b_p 153-1°, d_4^{20} 1.2332, d_4^{25} 1.2184, n_D^{20} 1.4525 (from 22.6 g. $(\text{MeO})_2\text{P}$ treated slowly with 43.5 g. $\text{BrHC}(\text{CO}_2\text{Et})$ and heated 1 hr. on steam bath), n_D^{20} 1.1559, n_D^{25} 1.4450 (from 16.6 g. $(\text{EtO})_2\text{P}$ and 23.9 g. $\text{BrHC}(\text{CO}_2\text{Et})$ on the steam bath), n_D^{20} 1.1117, n_D^{25} 1.4430 (CO_2Et), b_p 169-70°, d_4^{20} 1.1230, d_4^{25} 1.1117, n_D^{20} 1.4405 (from 21 g. $(\text{PrO})_2\text{P}$ and 24 g. $\text{BrHC}(\text{CO}_2\text{Et})$, heated 2 hrs. on a steam bath), n_D^{20} 1.4405 (from 20 g. $\text{BrHC}(\text{CO}_2\text{Et})$ (substantial decomposition), n_D^{20} 1.4405 (from 20 g. $(\text{BuO})_2\text{P}$ and 20 g. $\text{BrHC}(\text{CO}_2\text{Et})$, after 3 hrs. heating in a CO_2 atm.), n_D^{20} 1.4082 (mostly due to loss during distn.). Although phosphonates apparently were formed on heating $\text{BrHC}(\text{CO}_2\text{Et})$ with $(\text{iso-BuO})_2\text{P}$ or PhP(OR)_2 , the products could not be isolated because of decomposition. When 27.5 g. I was treated with 1.8 g. Na in 150 ml. Et_2O a brisk reaction ensued and the Na deriv. was formed in soln.; treatment with MeI , however, gave not the expected Me deriv. of I , but MePO(OR)_2 , b_p 80.5-1°, d_4^{20} 1.0725, n_D^{20} 1.4002. Similarly, $(\text{PrO})_2\text{POCH}(\text{CO}_2\text{Et})$ gave MePO(OR)_2 , b_p 68-70°, b_p 105-6°, d_4^{20} 1.0683, n_D^{20} 1.4082. This result is interpreted by a possibility of tautomerism of the Na deriv. in which is formed an enolic PONa compd. which adds MeI across the enolic double bond and the adduct breaks to give MePO(OR)_2 . The phosphonate esters were yellow liquids which on hydrolysis with HCl gave inorg. P acids and malonic acid only, thus confirming the earlier work of K. G. M. K.

KANAY, G.

PA 15T85

USSR/Chemistry - Alkylation
Chemistry - Arsenious acid

Mar 1947

"Some Alkylated Ethers of Arsenious Acid," G. Kanay,
3 pp

"Zhur Obshch Khim" Vol XVII, No 3

Investigation of new representatives of arsenious
acid ethers, obtaining, for the first time, isopropyl
and allyl ethers of arsenious acid.

15T85

KAMAY, GIL'M

USSR/Chemistry - Carbon Tetrachloride
Chemistry - Phosphinic Acids

Jan 1947

"The Effect of Carbon Tetrachloride on Ester Phosphite
and Phenylphosphinic Acid," Gil'm Kamay, 3 pp

"Dok Ak Nauk SSSR" Vol IV, No 3

Submitted by A. E. Arbuzov, Institute of Chemistry,
Kazan Branch, Academy of Sciences of the USSR. Ex-
periments were conducted to determine the interaction
between chlorine and bromine ethyl and nopyl on the
middle esters and salts of oxidized ester phosphite
acid. O. N. Belorossan and L. P. Egorov assisted on the
experimental part.

21T7

KAMAY, Gil'm

Methods for producing diphenylamine. Trudy KKHTI no.11:54-56 147.
(Diphenylamine) (MIRA 12:11)

KAMAY, GIL'M

PA 69T15

USSR/Chemistry - Organic Compounds
Chemistry - Synthesis

Mar 1948

"Action of Carbon Tetrachloride and Other Polyhalides of Paraffins on Alkylene Esters of Phenylphosphonic Acid," Gil'm Kamay, Lab Tech of Org Synthesis, Kazan Chem Tech Inst imeni S. M. Kirov, 5 $\frac{1}{2}$ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 3

Establishes that trichlorobromethane reacts with ethyl esters of phenylphosphoric acid. As a result of reaction bromine esters are released and there is a formation of ethyl esters of phenyltrichloromethylphosphoric acid. Submitted 10 Mar 1947.

69T15

KAMAY, Gil'm; RANKOVSKIY, R.K., student

Diisoamylphosphonoacetic and d-diisoamylphosphonopropionic esters
and some of their derivatives. Trudy KKHTI no.14:75-80 '49.
(MIRA 12:11)

1.Laboratoriya tekhnologii organicheskogo sinteza Kazanskogo
khimiko-tekhnologicheskogo instituta im. S.M. Kirova.
(Phosphonic acids)

CA

Action of carbon tetrachloride on esters of *p*-methoxybenzenephosphonous and diphenylphosphinous acids (Gil'm Kamal, *Doklady Akad. Nauk S.S.S.R.* 60, 389, 1952 (1950); cf. C.A. 41, 6583g. CCl_4 with $p\text{-MeOC}_6\text{H}_4\text{P}(\text{OR})_2$ readily yields the following esters of $p\text{-MeOC}_6\text{H}_4\text{P}(\text{OR})_2$: $\text{Ph}_2\text{P}(\text{O})\text{Me}$, bp. 128-30°, d₄ 1.2328, n_D 1.5312; $\text{Et}_2\text{P}(\text{O})\text{Me}$, bp. 157-8°, d₄ 1.3260, n_D 1.5423; $\text{Pr}_2\text{P}(\text{O})\text{Me}$, bp. 168-70°, d₄ 1.3094, n_D 1.5370; $\text{Bu}_2\text{P}(\text{O})\text{Me}$, bp. 180-1°, d₄ 1.2303, n_D 1.5267; $\text{iso-Bu}_2\text{P}(\text{O})\text{Me}$, bp. 178-80°, d₄ 1.2661, n_D 1.5294. Hydrolysis of these by HCl gave cryst. free acid, which on prolonged heating in H_2O gave $\text{MeOC}_6\text{H}_4\text{P}(\text{OH})_2$. A similar reaction of CCl_4 on prolonged heating with $(\text{CH}_3)_2\text{CHCHO}$, $\text{P}(\text{O})\text{CCl}_3$ gave the corresponding esters $(\text{CH}_3)_2\text{CHCHO}$, $\text{P}(\text{O})\text{CCl}_3$ (not characterized). Addn. of 20 g. $p\text{-MeOC}_6\text{H}_4\text{P}(\text{O})\text{CCl}_3$ to 9 g. EtOH and 23.2 g. PhNMe_2 in Et_2O gave $p\text{-MeOC}_6\text{H}_4\text{P}(\text{O})(\text{Et})_2$, bp. 138-8°, d₄ 1.0529, d₂₀ 1.0133, n_D 1.4380. This (10 g.), refluxed 5 hrs. with 0.7 g. CCl_4 gave $p\text{-MeOC}_6\text{H}_4\text{P}(\text{O})(\text{Et})_2$, bp. 145-7°, d₄ 1.2815, d₂₀ 1.2650, n_D 1.5408. $\text{Ph}_2\text{P}(\text{O})\text{H}$ (bp. 170-7°; from $\text{Ph}_2\text{P}(\text{O})\text{Cl}$ and EtOH with PhNMe_2) (5 g.) in 30 ml. Et_2O was treated dropwise with 4.5 g. CCl_4 ; the vigorous reaction gave upon evapn. $\text{Ph}_2\text{P}(\text{O})\text{CCl}_3$, m. 138-9° (from EtOH). Similarly, $\text{Ph}_2\text{POCHMe}_2$ gave the same phosphine oxide with CCl_4 . CCl_4 did not react with $(\text{PhO})_2\text{P}$ (bp. 218-19°, d. 1.2079, n_D 1.5021), $\text{EtP}(\text{OPh})_2$ (bp. 223-5°, d. 1.1923, n_D 1.5012), or $\text{PhP}(\text{OPh})_2$ (bp. 220°, d. 1.1649, n_D 1.6101) when heated, even for several hrs. to 160°. G. M. K.

KAMAY, G.I.; KHISANOVA, Z.L.

Trichlormethylparatolylphosphinic acid and its derivatives.

Izv.Kazan.fil.AN SSSR Ser.khim.nauk no.1:59-61 '50. (MLRA 10:5)

(Phosphinic acids)

Esters of cacodylphosphonic acid. H. G. Kamal and O. N. Belousova (Akhunov Chem. Inst., Kazan) *Izv. Akad. Nauk S.S.S.R., Otdel Khim. Nauk* 1930, 108-282; cf. *C.A.* 42, 1137f. — Compds. of the type $R_3AsP(O)(OR)_2$ prepd. from halarsines and $(RO)_2PONa$. are liquids distillable *in vacuo*, which possess a cacodylic odor and suffer degradation to alkyl halides, H_3PO_4 , and secondary arsine oxides on hydrolysis with HCl. Standing in air results in cleavage of the As—P link, apparently with formation of $(R_3As)_2O$ and $(RO)_2PO.O.P(O)(OR)_2$; the lower members are particularly sensitive to such oxidation. Addn. of 100.5 g. $EtAsI_3$ to 115 ml. 10 *N* NaOH and 150 ml. 95% $EtOH$, followed by addn. of 51 g. *iso*- $BuLi$ and refluxing 6 hrs. gave 60.8% $Et(iso-Bu)AsI$, b_p 110-4°, d_4^{20} 1.7417, d_4^{25} 1.7029. This (28 g.) refluxed 3 hrs. with $(BuO)_2PONa$ (from 2.08 g. Na and 17.6 g. $(BuO)_2POH$ in Et_2O) and the NaI filtered off gave 54% *iso*- $Bu-EtAsP(O)(OBu)_2$, b_p 138.5-40°, d_4^{25} 1.1208, d_4^{20} 1.1087, n_D^{20} 1.4738. $(BuO)_2PONa$ (from 3.2 g. Na and 28.6 g. $(BuO)_2POH$ in Et_2O) with 33 g. $MeEtAsI$ similarly gave 86% $MeEtAsP(O)(OBu)_2$, b_p 127.8°, d_4^{25} 1.0884, d_4^{20} 1.0710 (air oxidation yields $(EtMeAs)_2O$); bubbling of air for 5 hrs. through the substance gave a liquid, b_p 73-4°

and an undistillable residue of $(MeEtAs)_2O$ (cf. Wigton, *C.A.* 24, 3086). Similarly, $(iso-PrO)_2PONa$ gave a poor yield of $MeEtAsP(O)(OCHMe)_2$, b_p 99.0-9.5°, b_p 110-12°, d_4^{25} 1.1032, d_4^{20} 1.1733, n_D^{20} 1.4761; $EtBuAsI$ gave 52% $EtBuAsP(O)(OBu)_2$, b_p 116-7°, d_4^{25} 1.1226, d_4^{20} 1.1048, n_D^{20} 1.4775; 50% $EtPhAsP(O)(OPr)_2$, b_p 165.6°, d_4^{25} 1.2020, d_4^{20} 1.2427, n_D^{20} 1.5375, was obtained similarly, as was 40.5% $EtPhAsP(O)(OBu)_2$, b_p 176.6.5°, d_4^{25} 1.2031, d_4^{20} 1.1875, n_D^{20} 1.5304 (air oxidation or hydrolysis by boiling 6 hrs. with concd. HCl gave *ortho*-phenylarsine oxide, b_p 188-9°).

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[illegible]

this (4 g) and 12 ml. concd. HCl refluxed 2 hrs., then fractionately evaporated with H₂O, yielded $\text{RiCH}_2\text{C}(\text{Ph})(\text{OH})$, m. p. 181.5–182° (from Et₂O), sol. in EtOH and Et₂O. A trace from sequence as above with P₂O₅ gave 81% $\text{RP}(\text{OH})$, b.p. 120–30°, d₄²⁰ 1.0001, d₂₀²⁰ 0.9937, n_D²⁰ 1.5010, which boiled 3 hrs. with MeI gave 92% $\text{RMP}(\text{OH})$, b.p. 107–7°, d₄²⁰ 1.0089, d₂₀²⁰ 1.0004, n_D²⁰ 1.5185 (its hydrolysis gave 15% $\text{P}(\text{OH})$, as described above), while 10 g. CCl_4 with 10% $\text{P}(\text{OH})$ gave 12 g. $\text{RiCH}_2\text{C}(\text{Ph})(\text{OH})$, b.p. 169–70°, d₄²⁰ 1.0011, d₂₀²⁰ 1.0011, n_D²⁰ 1.5150 (hydrolysis with concd. HCl gave the free acid, m. p. 181°; as above). BuOH, as above, yielded 100% $\text{RP}(\text{OH})$, b.p. 170–1°; d₄²⁰ 1.0089, d₂₀²⁰ 0.9776, n_D²⁰ 1.5021, which distilled with MeI gave 90% $\text{RMP}(\text{OH})$, b.p. 130–3°, d₄²⁰ 1.0023, n_D²⁰ 1.5092, while CCl_4 , b.p. 178–9°, d₄²⁰ 1.0722, d₂₀²⁰ 1.0583, n_D²⁰ 1.2383, d₄²⁰ 1.0010, gave $\text{RiCH}_2\text{C}(\text{Ph})(\text{OH})$, b.p. 180–1°, d₄²⁰ 1.0087, n_D²⁰ 1.5267. Similarly iso-BuOH yielded 1.0087, n_D²⁰ 1.5267, b.p. 155–6°, d₄²⁰ 0.9807, d₂₀²⁰ 0.9607, n_D²⁰ 1.0987. $\text{RP}(\text{OH})$, m.p. and 9–2 g. CCl_4 reacted with heat evolution, yielding almost 100% iso-BuOH and 58% $\text{RiCH}_2\text{C}(\text{Ph})(\text{OH})$, yielding almost 100% iso-BuOH, d₄²⁰ 1.2250, n_D²⁰ 1.5294, which almost 100% iso-BuOH, d₄²⁰ 1.2601, d₂₀²⁰ 1.2250, eventually leads to the formation of $\text{RP}(\text{OH})$. [It may be noted that the Continued hydrolysis of $\text{RiCH}_2\text{C}(\text{Ph})(\text{OH})$ eventually leads to the formation of the initial $\text{Al}(\text{Ph})_3$ (see 212, 213, 1982), consists of Michaels and Panch. Ann. 212, 213, 1982, dictated by Michaels and P. procedure was used for the prepn.] although the M. and P. procedure was used for the prepn.] G. M. Kowalski

CA

n,n',n''-Trivinyltrialkyl esters of phosphorous acid.
N. A. Chadaeva and G. M. Kaimal (S. M. Kirov Chem. Technol. Inst., Kazan). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 1487-92 (1950).—Reactions of RMgBr with acrolein were used to secure vinylalkylcarbinols, RCH(OH) .

CH_3CH_2 , $\text{R} = \text{Me}$ (I), b. 96-7°, d_4^{20} 0.8334, n_D^{20} 1.4139. II (II), b. 112-10°, d_4^{20} 0.8400; P_r (III), b. 40-51°, d_4^{20} 0.8393, n_D^{20} 1.4230; Bu (IV), b. 63-4°, d_4^{20} 0.8384, n_D^{20} 1.4343; Ph (V), b. 101-2°, d_4^{20} 1.0231, n_D^{20} 1.5400. To 27 g. I, 45.5 g. PhNMgBr , and 100 ml. dry Et_2O was added with cooling and stirring 17.2 g. PCl_3 ; after stirring 0.5 hr. without further cooling, and filtration, the filtrate yielded 15 g. $(\text{CH}_3\text{CHCH}_2)_3\text{P}$, b. 91-3°, d_4^{20} 0.9337, n_D^{20} 1.4331, which reacts with CuX , MeI , and CCl_4 (the latter yields $\text{MeCHClCH}_2\text{CH}_3$); addn. of 15 g. Br to 8 g. ester in Et_2O gave 1,2,3-tribromobutane, b. 113-14°. Similarly II with PhNEt_2 gave 84% $(\text{CH}_3\text{CHCH}_2)_3\text{P}$, b. 123-4°, b. 102-3°, d_4^{20} 0.9467, n_D^{20} 1.4521; its reaction with MeI or CCl_4 gave undistillable products; bromination, as above, gave 1,2,3-tribromopentane, b. 118-20°, d_4^{20} 2.0213, n_D^{20} 1.5540. III similarly gave $(\text{CH}_3\text{CHCH}_2)_3\text{P}$, b. 137-0°, d_4^{20} 0.9365, n_D^{20} 1.4319. IV gave 63% $(\text{CH}_3\text{CHCH}_2)_3\text{P}$, b. 155-7°, d_4^{20} 0.9400, d_4^{20} 0.9230, n_D^{20} 1.4521; reaction with CCl_4 gave 3-chloroheptene, b. 104-7°, d_4^{20} 0.9484, d_4^{20} 0.9284, n_D^{20} 1.4501, while bromination gave 1,2,3-tribromoheptane, b. 130-8°, d_4^{20} 1.7805, d_4^{20} 1.7519, n_D^{20} 1.5361. V with PCl_3 as above gave an oil which could not be distd., as at 60° it polymerized rapidly to a solid; apparently $(\text{CH}_3\text{CHCH}_2)_3\text{P}$ was formed, since bromination of the original oil gave (1,2,3-tribromopropyl)benzene, m. 123-4°.

G. M. Kosolapoff

CA

Action of carbon tetrachloride on alkyl esters of pyrophosphorous acid. Gil'm Katnat (A. R. Arbuzov Chem. Inst., Kazan). *Doklady Akad. Nauk S.S.S.R.* 70, 244 (1950), cf. 41, 3883g; 44, 127e.—Esters of pyrophosphorous acid react with CCl_4 in 2 ways; 1 mode cleaves the POP link, forming $\text{CH}_3\text{CPO}(\text{OR})_2$ and $(\text{RO})_2\text{PCl}$, the 2nd yielding $\text{CH}_3\text{CPO}(\text{OR})_2$ and $(\text{RO})_2\text{POCl}$. Apparently the cleavage of the POP bond by the Cl fragment may occur on either side of the pyro O atom. Warming 31.6 g. CCl_4 and 51 g. $(\text{EO})_2\text{PO}(\text{OEt})_2$, bp 100-7°, n_D^{20} 1.4338, 2 hrs. on a steam bath (heating interrupted until subsidence of the initial action) leads to no loss of wt. and distn. yields unstated amts. of the following products: $(\text{EO})_2\text{PCl}$, bp 40-51°, $(\text{EO})_2\text{POCl}$, bp 88-9°, and 7.9 g. $\text{CH}_3\text{CPO}(\text{OEt})_2$, bp 122-3.5°, d_4^{20} 1.3851, d_4^{25} 1.3610, n_D^{20} 1.4588. Since the reaction was run in a CO_2 atm., the formation of chlorophosphate could not be ascribed to oxidation of the phosphite. Similarly, 18 g. CCl_4 and 31 g. $(\text{PrO})_2\text{PO}(\text{OPr})_2$, bp 147-8°, n_D^{20} 1.4305, gave after 3 hrs. unstated amts. of $(\text{PrO})_2\text{PCl}$, bp 68-70°, n_D^{20} 1.4400, $(\text{PrO})_2\text{POCl}$, bp 100-7°, and $\text{CH}_3\text{CPO}(\text{OPr})_2$, bp 144-5°, d_4^{20} 1.2625, d_4^{25} 1.2454, n_D^{20} 1.5211. Similarly 4 hrs. heating of 25 g. CCl_4 and 40 g. $(\text{BuO})_2\text{PO}(\text{OPr})_2$, bp 183-5°, n_D^{20} 1.4448, gave some crude $(\text{BuO})_2\text{PCl}$, bp 85-110°, and $\text{CH}_3\text{CPO}(\text{OBu})_2$, bp 151-2°, n_D^{20} 1.4523. G. M. Kosolusoff

Translation W-23324, 18 Jul 52

C. A.

13

Alkyl esters of phosphonocarboxylic acids. Gil'm Kamal... and E. I. Shugurova (S. M. Kurnov Chem. Technol. Inst., Kurau). *Doklady Akad. Nauk S.S.S.R.* 72, 301-4 (1950). Reaction of esters of halogen-substituted aliphatic acids with either $(RO)_2P$ or $(RO)_2P(ONa)$ was used to prep. the following esters (there is no indication as to which method was used to obtain the yields given in parentheses): $(RO)_2P(O)CO_2Et$ (R given): *Me* (no yield given), b_p 97-8°, d_4^{20} 1.1614; *iso-Pr* (62.3%), b_p 131-30.5°, d_4^{20} 1.0702, n_D^{20} 1.4185; *Pr* (45.3%), b_p 143.5-4.5°, d_4^{20} 1.0690, n_D^{20} 1.4241; *Bu* (41.5%), b_p 161-2°, d_4^{20} 1.0590, n_D^{20} 1.4383; *iso-Am* (47.7%), b_p 169-70°, d_4^{20} 1.0312, n_D^{20} 1.4326. $(RO)_2P(O)CH_2CO_2Et$: *Me* (45%), b_p 131.5-5.0°, d_4^{20} 1.2053, n_D^{20} 1.4302; *iso-Pr* (49%), b_p 142-3°, d_4^{20} 1.0776, n_D^{20} 1.4285; *Pr* (58.3%), b_p 155.5-6.0°, d_4^{20} 1.0621, n_D^{20} 1.4292; *Bu* (49.2%), b_p 170.5-7.0°, d_4^{20} 1.0550, n_D^{20} 1.4335; *iso-Am* (47.9%), b_p 179-30°, d_4^{20} 1.0254, n_D^{20} 1.4371. $(RO)_2P(O)CHMeCO_2Et$: *iso-Pr* (49.9%), b_p 134.5-5.5°, d_4^{20} 1.0440, n_D^{20} 1.4238; *iso-Bu* (53.1%), b_p 161.5-8.5°, d_4^{20} 1.0390, n_D^{20} 1.4331; *iso-Am* (38.4%), b_p 181-2°, d_4^{20} 1.0011, n_D^{20} 1.4380. $(RO)_2P(O)CMe_2CO_2Et$: *iso-Pr* (49.1%), b_p 134-5°, d_4^{20} 1.0107, n_D^{20} 1.4258; *iso-Bu* (35.9%), b_p 160-1°, d_4^{20} 1.0211, n_D^{20} 1.4332. All but the 1st compd. yielded the corresponding free acids (undescribed procedure

or results) on hydrolysis. Allyl alc. with PCl_5 yielded diallyl phosphite, b_p 97.5-8.5°, d_4^{20} 1.1001, d_4^{20} 1.0783, n_D^{20} 1.4430, which easily adds Br and reacts with Na, yielding the Na *derm.* which with esters of halogenated acids yielded $(C_2H_5O)_2P(O)CO_2Et$ (33.5%), b_p 153-4°, d_4^{20} 1.1130, n_D^{20} 1.4409, and $(C_2H_5O)_2P(O)CH_2CO_2Et$ (30.1%), b_p 155-6.5°, d_4^{20} 1.1384, n_D^{20} 1.4514; the above results were obtained only if Et_2O was used as the solvent; use of $EtOH$ in both instances gave no phosphonates and only $(EtO)_2CO$ and $EtOCH_2CO_2Et$, resp., were isolated, while the diallyl phosphite was recovered. This result is explained by the equil. shift in the system: $(RO)_2POH + EtONa \rightleftharpoons (RO)_2PONa + EtOH$ in the presence of much $EtOH$ (cf. Kosolapoff, C.A. 40, 4659). The above phosphonocarboxylates with $PhNH_2$ or $p-MeC_6H_4NH_2$ and also NH_3 gave largely the corresponding amides at the C atom only. G. M. K.

CA

Dipole moments of some tertiary aryls. K. I. Kuz'min and G. M. Kargal (S. M. Kirov Chem.-Technol. Inst., Kazan). *Doklady Akad. Nauk S.S.S.R.* 79, 709-10 (1980). From dielec. const. measurements in dil. soln. in C_6H_6 at 20° , the dipole moments $\mu = 0.0137 \times 10^{-18}$ $\sqrt{(\epsilon' - \epsilon''/R_0)^2}$, with the mol. polarization P_m obtained by graphic extrapolation, the electronic polarization taken equal to the mol. refraction, and the at. polarization not taken into account, were detd. to: Et_3As 1.04; Pr_3As 1.00; Bu_3As 0.88; $(p\text{-MeC}_6\text{H}_4)_3\text{As}$ 1.74; $\text{EtBu}(p\text{-MeC}_6\text{H}_4)_2\text{As}$ 1.29. The bond moment $\text{As}-\text{C}$ (aromatic), calcd. from μ of Pr_3As , is 0.80, with the angle $\text{C}-\text{As}-\text{C} = 90^\circ$, as detd. by electron diffraction. The vector sum of the bond moments for $(p\text{-MeC}_6\text{H}_4)_3\text{As}$, with the $\text{As}-\text{C}$ bond moments pointing from the ring to the As, is calcd. to 1.68, i.e. close to the exptl. 1.74. The calcd. μ for 1, 1.23, is also close to the exptl. 1.29. The new compd. 1, synthesized from BuMgBr and $\text{Et}(p\text{-MeC}_6\text{H}_4)_2\text{As}$ in abs. ether, has the const. d_n 1.62-4°, d_D 1.0991, n_D 1.5390. N. Thon

GIL'M KAMAI, CHADAYEVA, N. A.

Anhydrides

Cyclic acid chlorides and mixed esters of propylene-glycol arsenide. Dokl,
AN, SSSR, 8, No. 5, 1951. Khimicheskiy Institut im. A. Ye. Arbuzova;
Kazanskogo Filiala Akademii Nauk SSSR

Monthly List of Russian Accessions, Library of Congress, May 1952, UNCLASSIFIED.
Red. 29 March 1951

USSR/Chemistry - Organophosphorus Compounds Apr 51

"Diallylphosphorous Acid and Its Derivatives," Ye. I. Shugurova, Gil'm Kamay, Lab of Tech of Org Synthesis, Kazan' Chemtech Inst Imeni S. M. Kirov

"Zhur Obshch Khim" Vol XXI, No 4, pp 658-662

Synthesized and studied for 1st time diallylphosphorous acid, 1st rep of unsaturated esters of phosphorous acid. Obtained diallylphosphono formic acid ester and diallylphosphono acetic acid ester by interaction of Na deriv of diallylphosphorous

182T18

USSR/Chemistry - Organophosphorus Compounds (Contd) Apr 51

acid with corr esters of chloro-carbonic or chloroacetic acid. Proposes hypothesis for formation of diethylcarbonate and ethoxyacetic ester when above syntheses are carried out in alc.

182T18

KAMAY, GIL'M

KAMAY GIL'M

PA 194T65

USSR/Chemistry - Organophosphorus
Compounds

Dec 51

"Certain New Phosphonocarboxylic Esters and Their
Derivatives," Gil'm Kamay, E. Sh. Bastanov, Lab
of Technol of Org Synthesis, Kazan' Chemtech
Inst Imeni S. M. Kirov

"Zhur Obshch Khim" Vol XXI, No 12, pp 2188-2193

Synthesized and studied Et esters of α -dialkyl-
phosphono-propionic, isobutyric, and malonic
acids. Interaction of aniline or p-toluidine with
above esters yielded corresponding arylamides of
phosphonocarboxylic acids. Studied their

194T65

USSR/Chemistry - Organophosphorus
Compounds (Contd)

Dec 51

properties. Found that action of alic NH_3 on phos-
phonomalonic ester breaks P-C bond, yielding amide
of malonic acid.

194T65

KAMAY, Gil'm

1 Feb 51

USSR/Chemistry - Organic Arsenic
Compounds

"Synthesis and Properties of Some Cyclic Esters
of Ethyleneglycolarsenous Acid," Gil'm Kamay,
Z. L. Khisamova, Chem Inst. imeni A. Ye. Arbuzov,
Kazan' Affiliate, Acad Sci USSR

76
"Dok Ak Nauk SSSR" Vol. 177, No 4, pp 535-538

By reacting ethylene glycol with arsenic trichloride in presence of pyridine, synthesized chloride of ethyleneglycolarsenous acid (bp 71-72° at 11 mm, mp 44-45°). Prep'd number of triesters of arsenous acid from this cyclic diester monochloride. The bp of alkyl esters of ethyleneglycolarsenous acid lie very close to those of the analogous P compounds. In the case of Me and Et esters of either ethyleneglycolarsenous acid or ethyleneglycolphosphorous acid, they are in the neighborhood of 50-60° at 11-23 mm. Prep'd triester $As_2(-OCH_2CH_2O-)_3$. By oxidizing latter with bromine, obtained penta-ester of arsenic acid $As_2(-OCH_2CH_2O-)_5$.

178T17

KAMAY, GIL'M

USSR/Chemistry - Organophosphorus
Compounds 1 Aug 51

"Amides of Dialkylphosphonocarboxylic Acids and
Their Derivatives," Gil'm Kamay, Ye. I. Shugurova,
Kazan' Chem-Tech Inst Inent S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXIX, No 4, pp 605-607

Prepd alkyl esters of phosphonocarboxylic acids (I)
as described in "Dok Ak Nauk SSSR" Vol LXXII, 1950,
p 301. Reacted them with ammonia according to P.
Helen to prep amides. In some cases, obtained
amides of dialkylphosphonoacetic acid by reacting

211T28

trialkylphosphites with monochloroacetamide. Re-
acted I with aniline or p-toluidine to obtain N-
aryl amides. Lists melting points of 7 dialkyl-
phosphonoformamides and the corresponding acetamides
as well as of 8 monophenylamides of dialkylphos-
phonoacetic and propionic acids and the correspond-
ing monoparatolylamides. Describes monoarylamides
of phosphonomaleonic acids which were obtained as
by-products and their behavior on treatment with
alcoholic ammonia (fission of P-C bond).

211T28

USSR/Chemistry - Organophosphorus Compounds 11 Aug 51

"The Action of Haloforms on Alkyl Esters of Phosphorous Acid," G.I. Kamay, Kazan' Chem-Tech Institut S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXIX, No 5, pp 795-798

Trimethyl phosphite reacts with CCl_4 forming trichloromethylphosphonic acid (I) dimethyl ester (Arbuzov reaction) and in addn to that dimethylphosphoric acid chloride. Triethylphosphite on reacting with CCl_3Br forms diethyl ester of I, but on reacting with CCl_3F forms diethyl ester

210T23

USSR/Chemistry - Organophosphorus Compounds (Contd) 11 Aug 51

of the monofluorodichloromethyl analogue of I. Reaction of trialkyl phosphites (II) with CHBr_3 yields dibromomethylphosphonic esters, but also a small quantity of dialkylphosphoric acid bromide. The reaction with CHI_3 is similar. Chloroplatin reacts energetically with II, the only products isolated being dialkylphosphoric acid chlorides. Perchloromethylmercaptan also reacts energetically with II, but no products could be isolated.

210T23

GILIM-KAMAY

USSR/Chemistry - Arsenic Compounds 11 Dec 51

"Cyclic Acid Chlorides and Esters of Propyleneglycolarsenous Acids," Gil'm Kanay, N. A. Chadayeva, Chem Inst Imeni A. E. Arbuzova, Kazan' Affiliates, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXI, No 5, pp 837-840

Synthesized 6 new chlorides of propyleneglycolarsenous acids, which are sol in many org solvents, but hydrolyze in water to form white arsenic trioxide. Synthesized the alphanemethoxypropyleneglycol ester of alpha-methoxypropyleneglycolarsenous acid, which upon heating with arsenic trichloride

210740

USSR/Chemistry - Arsenic Compounds 11 Dec 51
(Contd)

yielded the cyclic chloride of alpha-methoxypropyleneglycolarsenous acid. The chloride of alpha-methoxypropyleneglycolarsenous acid and 4 of the corresponding esters obtained.

210740

KANAY, Gil'm

KAMAY, Gil'm

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

Preparation of cyclic chlorides and mixed esters of α -alkoxypropylene glycol arsenous and trimethylene glycol arsenous acids. Gil'm Kamal and N. A. Chadayeva. *Bull. acad. sci. U.S.S.R., Classe sci. chim.* 1952, 807-11 (Engl. translation). See *C.A.* 47, 10470c.

11-4-54

KAMAY, GIL'M

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

①
Dechlorination of hexachloroethane by alkyl esters of
phosphorous acid, Gil'm Kamal. Bull. acad. sci.
U.S.S.R., Classe sci. chim. 1952, 810-20 (Engl. translation).
H. L. H.
See C.A. 47, 10401a.

4-5-54

KAMAY, G.I.: CHADAYEVA, N.A.

Preparation of cyclic chlorides and mixed esters of α -alkoxypropylene glycol
arsenous and trimethylene glycol arsenous acids. Izvest. Akad. Nauk S.S.S.R.
Otdel. Khim. Nauk '52, 908-15. (MLA 5:11)
(CA 47 no.20:10470 '53)

1. A.E.Arbusov Chem. Inst., Kazan.

KAMAY, Gil'm.

Dechlorination of hexachloroethane by alkyl esters of phosphorous acid.
Invent. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk '52, 923-5. (MIRA 5:11)
(CA 47 no.20:10461 '53)

1. S.M.Kirov Chem.-Technol. Inst., Kazan.

KAMAY, G.I.; KUZ'MIN, K.I.

Producing some esters of arsenic acid. Trudy KKHTI no.17:7-10
'52 [publ. '53]. (MIRA 12:11)
(Arsenic acid)

KAMAY, G. and KOSHKINA, E. S.

"Nitro- and Chloro-Derivatives of Triphenylphosphate and Triphenylphosphite,"
Trudy Kazansk Khim. Tekh. Inst. im. S. M. Kirov, No.17, pp. 11-20, 1952

Evaluation B 3,075,646

Translation in Library

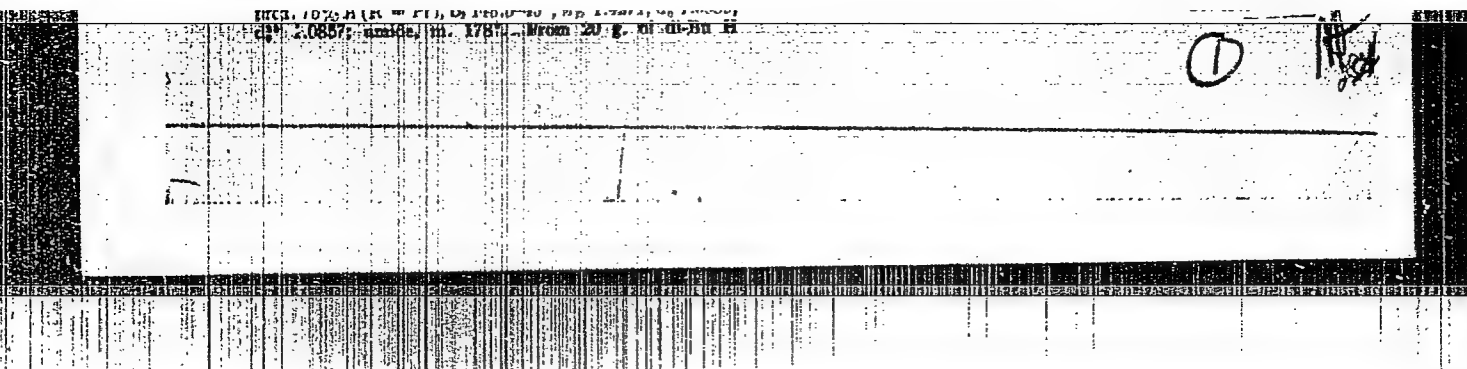
KAMAY, Gilm

1952
Some esters of phosphonic acid and phosphonoacetic acids, and their amino derivatives. (Gilm Kamay and E. I. Shugurova. *Trudy Kazan. Khim. 1954, No. 44* (1953) No. 17, 21-53; *Russk. Zhur. Khim.* 1954, No. 44607.—A number of Et dialkylphosphonoformates, $(RO)_2P(O)CO_2Et$ (A), and Et dialkylphosphonoacetates, $(RO)_2P(O)CH_2CO_2Et$ (B) were obtained by the action of EtO_2Cl (I)

phosphite (VI), 2.4 g. Na, and 11.23 g. I was obtained 41.6% A (R = Bu), b_p 161-2°, n_D²⁰ 1.4303, d₄²⁰ 1.0599, d₄²⁵ 1.0468; amide, m. 192°. From 20 g di-iso-Am H phosphite (VII), 2.6 g Na, and 12.3 g. I was obtained 48% A (R = iso-Am), n_D²⁰ 1.4326, d₄²⁰ 1.0312, d₄²⁵ 1.0170; amide, m. 193.5°. III (20 g.), 4.2 g. Na, and 22.3 g. II gave 45% B (R = Me), b_p 134.5°, n_D²⁰ 1.4302, d₄²⁰ 1.2659, d₄²⁵ 1.1878.

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n_D^{20} 1.4535, $n_D^{28.0}$ 880.0; $(C_6H_5O)_4As$ (b_p 211–13°, d₄²⁰ 0.9769, n_D²⁰ 1.4669, $n_D^{28.1}$ 1101.1; $(n-C_4H_9O)_4As$ (b_p 71°, d₄²⁰ 1.0037, n_D²⁰ 1.4280, $n_D^{23.6}$ 552.4; $(n-C_4H_9O)_4As$ (b_p 115–17°, d₄²⁰ 1.0388, n_D²⁰ 1.4393, $n_D^{24.8}$ 620.2; $(MeO)_4AsO$ (b_p 97–9°, d₄²⁰ 1.5572, n_D²⁰ 1.4337, $n_D^{33.3}$ 294.1; $(EtO)_4AsO$ (b_p 118–20°, d₄²⁰ 1.3023, n_D²⁰ 1.4343, $n_D^{30.7}$ 569.8; $(PrO)_4AsO$ (b_p 144–6°, d₄²⁰ 1.1915, n_D²⁰ 1.4391, $n_D^{22.6}$ 692.2; $(n-C_4H_9O)_4AsO$ (b_p 160–71°, d₄²⁰ 1.1257, n_D²⁰ 1.4421, $n_D^{23.4}$ 630.2; $(C_6H_5O)_4AsO$ (b_p 189–91°, d₄²⁰ 1.0496, n_D²⁰ 1.4488, $n_D^{23.4}$ 837.4. The group unarachor

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of A are rather closely related in these compds

G. M. Kosolapoff

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CIA-RDP86-00513R000620220014-4"

KAMAY, G. I.

... ethyleneglycol arsenic acid. (Chim. Kazan. 1922, 2, 1823-30 (1923). Addn. of 100 g. As_2O_3 to CH_2O in 97.2 g. pyridine and 400 ml. dry Et_2O , followed by standing overnight at 100°C. and 1 hr. at reflux gave on distn. of the filtrate

some 81 g. $\text{O}(\text{CH}_2)_2\text{O}(\text{AsO})_2$ (I), bp 71-2°, n. 1.44-5°, along with higher-boiling products, which included 10 g. $(\text{CH}_2\text{O})_2(\text{AsO})_2$ (II), bp 100-7°, d. 1.5051, n. 1.6423. I is instantly hydrolyzed by H_2O yielding As_2O_3 . Addn. of I to $(\text{CH}_3\text{OH})_2$ in pyridine and Et_2O , as above, gave an unaltered yield of II. Heating 60 g. As_2O_3 with 50.4 g. $(\text{CH}_3\text{OH})_2$ 30 min. at 140-50°, followed by continued heating under water-pump vacuum for removal of H_2O , gave 92.4% II, bp 100-1°. Addn. of 6 g. AsCl_3 to 15 g. II, followed by 0.5 hr. heating to unaltered temp., gave largely I, bp 60-7°. Refining 2.5 g. II with 50 ml. H_2O gave As_2O_3 . To 51 g. II in CCl_4 was added with cooling 28 g. Br; the resulting ppt. of $(\text{CH}_3\text{O})_2\text{As}(\text{OH})(\text{OCH}_2)_2$ in 127° (Englund, C.A. 33, 595), was sep'd. and the filtrate yielded 32.2 g. greenish lustrous liquid, identified as $(\text{CH}_3\text{O})_2\text{As}(\text{Br})(\text{OCH}_2)_2$, bp 88°, d. 1.6070, d. 2.6668, n. 1.6588. Thus, the previously proposed structure of the substance, m. 127° (C.A. 45, 101902) is in error; probably the initially formed $(\text{CH}_3\text{O})_2\text{As}(\text{OH})(\text{OCH}_2)_2$ is hydrolyzed in handling to the acidic product given above. Addn. of 20 g. I to 3.8 g. MeOH in 9.2 g. pyridine and 250 ml. Et_2O with cooling, followed by 1 hr. reflux, gave 8.6 g.

$\text{O}(\text{CH}_2)_2\text{O}(\text{AsO})_2$, bp 50-1°, d. 1.6453, d. 1.6310, n. 1.4935. Similarly were obtained the following esters (R shown followed by d, d' and n): Et, bp 61-2°, (R shown followed by d, d' and n): Et, bp 61-2°, 1.5031, 1.4784, 1.4788; Pr, bp 74-5°, 1.4188, 1.3923, 1.4702; Bu, bp 93°, 1.4024, 1.3761, 1.4785; n-C₁₀H₂₁, bp 126-1°, 1.3023, 1.2818, 1.4742; n-C₁₂H₂₅, bp 130-1°, 1.2671, 1.2465, 1.4736; n-C₁₄H₂₉, bp 110°, 1.2449, 1.2250, 1.4737; n-C₁₆H₃₃, bp 117-18°, 1.2240, 1.2041, 1.4748; cyclohexyl, bp 118°, 1.4270, 1.4044, 1.5070 (from cyclohexanol); Ph, bp 143-4°, 1.5887, 1.5140, 1.5716. All these are readily hydrolyzed by H_2O yielding As_2O_3 . Heat-

Full translation -
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Kamal, G. (2)

ing $O.CH_2.CH_2.O.AsOMe$ with MeI 0 hrs. at reflux resulted in no reaction. Similarly II failed to react with MeI , S ,

or Cu_2Br_2 . Addn. of 4.4 g. Br to 5 g. $O.CH_2.CH_2.O.AsOEt$ in CCl_4 gave an unstated yield of $C_4H_9O_4AsBr_2$, bp $72-3^\circ$, d_4^{20} 2.2153, d_4^{25} 2.1707, n_D^{20} 1.5830. When 10.3 g. I in Et_2O was slowly added to cooled 15 g. $(BuO)_3P$ in Et_2O a vigorous reaction took place with deposition of red P . The filtrate gave some $BuOH$ and a fraction, bp 140° , d_4^{20} 1.1135, n_D^{20} 1.4333, which contained P and As but decompd. rapidly to a black solid; no analyses were made, presumably the substance was crude $(CH_3O)_2AsP(O)(ORu)_2$. To a soln. of $(EtO)_2PCONa$ (from 24.5 g. $(RO)_2POH$) in Et_2O was added 30 g. I with cooling; the mixt. acquired a red color and deposited $NaCl$ (9.9 g.); on distn. the filtrate decompd. and no individual substances were isolated. G. M. Kosolapoff

(3) 2/2

Preparation and symmetrization of some unsaturated
esters of isopropyl acids. Chien Kuan and U. A. T. Rao

KAMAL, GIL'AN

(3)

The first representatives of cacodylphosphonic esters. Gil'an Kamal and E. M. Sh. Nastaflov (S. M. Kirov Chem. Technol. Inst., Kazan). *Doklady Akad. Nauk S.S.S.R.* 89, 693-5 (1953).—Mixing Me_2AsBr at room temp. with $(\text{RO})_3\text{P}$ and heating 2 hrs. until the evolution of RBr was complete, gave the following cacodylphosphonates, $\text{Me}_2\text{AsP}(\text{O})(\text{OR})_2$ (R, % yield, b.p./mm., d_4^{20} , and n_D^{20} given): *Me*, 60.5, 78.5°/1, 1.4011, —; *Et*, 74.3, 83°/1, 1.3036, 1.2932; *Pr*, 64.9, 101.5°/1, 1.2343, 1.2242; *Me_2CH*, 64.4, 83-3°/1, 1.2112, 1.2015; *Bu*, 54.1, 122-3°/1, 1.1933, —. These are colorless odoriferous liquids, which are distillable only in a high vacuum in an inert atm. The As-P link is destroyed rapidly by halogen acids, alkalis, and atm. O. Oxidation of the di-Et ester with pure O is energetic and terminates explosively. Oxidation in air yields $(\text{Me}_2\text{As})_2\text{O}$ and probably $[(\text{RO})_2\text{P}(\text{O}))_2\text{O}$. The di-Me ester is the most readily oxidized of this series. The reaction of Et_2AsCl with $(\text{RO})_3\text{P}$ requires heating and yields rather small amts. of the expected phosphonates, $\text{Et}_2\text{AsP}(\text{O})(\text{OR})_2$ (R, % yield, b.p./mm., d_4^{20} , d_4^{25} , and n_D^{20} given): *Et*, 29.8, 98.5-9.5°/1, 1.3205, —, —; *Et*, 32.2, 105.5-6.5°/1, 1.2276, 1.2129, 1.4578; *Pr*, 36.3, 124-5°/1, 1.1817, 1.1675, 1.4901; *Me_2CH*, 30.2, 106-7°/1, 1.1678, 1.1529, 1.4782; *Bu*, 10.9, 144-5°/1, 1.0522, —, —. These esters resemble the Me_2As derivs. but are less readily oxidized in air. Attempted hydrolysis with 10% HCl gave $(\text{Et}_2\text{As})_2\text{O}$, as a result of hydrolysis of the As-P link, and apparently H_3PO_4 .

G. M. Kozolapoff

1. KAMAY, Gil'm; KHISANOVA, Z. L.; CHADAYEVA, N. A.
2. USSR (600)
4. Arsenous Acid
7. Methods of producing alkyl and glucol ethers of arsenous and arylarsenous acids.
Dokl. AN SSSR 89, No. 6, 1953.

Evaluation
B-76836, 19 Jul 54

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

KAMAY, Gil'm; KHISMATULLINA, L.; ARBUZOV, A.Ye., akademik.

Separation of asymmetric tetravalent phosphonium compounds into optically active components. Dokl.AN SSSR 92 no.1:69-71 S '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Arbuzov). 2. Khimicheskiy institut im. A.Ye. Arbuzova Kazanskogo filiala Akademii nauk SSSR (for Kamay and Khismatullina). (Phosphonium compounds)

Gil'm Kamay

USSR/Chemistry

Card 1/1 Pub. 151 - 23/36

Authors : Gil'm Kamay, and Kuz'min, K. I.

Title : The parachors of certain esters of ethylene glycol arsenous acid

Periodical : Zhur. ob. khim. 24/1, 128-130, Jan 1954

Abstract : The parachors of five esters of ethylene glycol arsenous acid were determined experimentally. The results are tabulated. Prior to the determination of the surface tension, density and index of refraction all substances were subjected to thorough distillation in vacuo. The surface tension was determined by the method of maximum pressure of the bubbles. The physical constants of the esters are described and the problem concerning the structure of such esters as well as esters of other cyclic compounds with long side-chain is briefly discussed. Seven references: 5-USA and 2-USSR (1938-1950). Tables.

Institution: The S. M. Kirov Chemical-Technological Institute, Kazan

Submitted : July 9, 1953

KAMAY, GIL'M

USSR/Chemistry

Card 1/1

Authors : Kamay, Gil'm; and Khisomava, Z. L.

Title : Acid chlorides and mixed esters of tetramethylethyleneglycolarsenous and pyrocatechinarsenous acids

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 816 - 820, May 1954

Abstract : First obtained and investigated were acid chlorides of tetramethylethyleneglycolarsenous and pyrocatechinarsenous acids. The acid chlorides obtained are crystalline substances soluble in water and some organic solvents. The reaction of these acid chlorides with various alcohols in a benzene medium in the presence of anhydrous pyridine results in the formation of mixed esters of tetramethylethyleneglycolarsenous and pyrocatechinarsenous acids the properties of which are described. Two USSR references. Table.

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